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THE UNIVERSITY OF ALBERTA

# ATTITUDES OF EDUCATIONAL ADMINISTRATORS TOWARD HUMAN RESOURCES ACCOUNTING

BY

JOHN LYON MYROON

A THESIS

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EDMONTON, ALBERTA

FALL, 1982

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Dated October 13, 1982

# DEDICATION

"Just as a mountain needs a valley to be a mountain, I need a world of other people and things to be an I" (Troutner, 1969:124). This research is dedicated to that very special world of other people, namely to my beloved and understanding wife Mildred and wonderful children Monique and John Jr. who not only supported this research but also made many personal sacrifices during the process and directly assisted in the distribution and collection of the questionnaires. Additionally, this research is dedicated to my marvelous and loving parents John and Olga Myroon who have faithfully and relentlessly encouraged and supported the pursuit of knowledge, in general, and this study, in particular. Finally, this research is also dedicated to my understanding father-in-law and mother-in-law who provided encouragement throughout the extended research period.

# ABSTRACT

The purpose of this study was to assess the attitudes held by educational administrators in selected Alberta school jurisdictions toward Human Resources Accounting and the HRA causal, intervening and end-result variables and to compare the attitudes of various types of educational administrators. As well, the study inferred probable behavior patterns of study respondents toward the assumed implementation of HRA where significant differences were found relative to each sub-problem.

The study used a factorial research design to study the relationship between leadership style, organizational complexity and administrative position, as independent variables, and the dependent variable of attitudes and strength of attitudes toward HRA. A questionnaire, which included several instruments, was used for data gathering. The Semantic Differential technique was used to develop an instrument for measuring attitudes and strength of attitudes. A numeric methodology, which was based upon the Law of Comparative Judgement, was used to develop a composite measure of organizational complexity for each respondent. The Least Preferred Coworker instrument was used to ascertain leadership style. Analysis of variance was the major statistical technique utilized.

In general, the findings showed a large degree of variability in the direction and strength of attitudes held by the various groups. Statistically significant differences were found for six of the sixteen sets of comparisons made. Within these six sets, there were nine significantly different between - group means (out of a possible thirty-

six) which were:

1. Relationship-oriented administrators had significantly more positive attitudes toward HRA and the HRA intervening and end-result variables than the socioindependent and task-oriented administrators.
2. Relationship-oriented administrators had significantly more positive attitudes toward the HRA causal variable type of information than did the task-oriented administrators.
3. Administrators who perceived themselves functioning in highly complex organizations had significantly stronger attitudes toward HRA than did respondents who perceived themselves functioning in organizations of medium complexity.
4. Administrators who perceived themselves functioning in highly complex organizations had significantly stronger attitudes toward the HRA causal variables than did respondents who functioned in medium complexity organizations.

There were no statistically significant differences in either the direction or strength of attitudes among principals, superintendents and secretary-treasurers and among respondents who functioned in low, medium and high complexity organizations. Some of the major general findings were:

1. The most positive attitude was toward the HRA causal variable type of information.
2. The most negative attitude was toward the HRA intervening variable type of information.

3. Secretary-treasurers had the strongest positive attitude toward HRA and the three HRA variables.
4. Task-oriented administrators had the strongest negative attitudes toward HRA and the three HRA variables.

Of the numerous implications of this study, three are considered to be of major importance:

1. The composite organizational complexity instrument developed for this study appears to be useful in measuring the complexity of an organization.
2. The Semantic Differential instrument developed to measure the direction and strength of attitudes toward HRA could be administered for the purpose of the development of an HRA implementation strategy.
3. The methodology developed for predicting probable behavior patterns from the results of the SD instrument could be used to establish effective HRA implementation strategies.

# ACKNOWLEDGEMENTS

As no man is an island onto himself, nor is any research conducted in isolation from others. This writer wishes to acknowledge his indebtedness to the many individuals who provided the support and assistance to complete his doctoral program at the University of Alberta.

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To these and various other individuals, the writer offers sincere gratitude.

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# CHAPTER I

## THE PROBLEM AND STUDY CONTEXT

This study was designed to measure and compare the perceived attitudes and strength of attitudes held by various educational administrators in Alberta toward Human Resources Accounting (herein referred to as HRA) and the HRA causal, intervening and end-result variables. The major purpose was to ascertain whether or not the perceived attitudes and strength of attitudes differed significantly between and among educational administrators who (1) had different types of leadership styles, (2) functioned in organizations with different degrees of complexity, and (3) occupied different administrative positions.

## STUDY BACKGROUND

Organizations consist of physical resources (assets or capital such as land, machines and buildings), financial resources, and human resources (the people who work within). Management information systems, conventional operational accounting statements and balance sheets of service and non-service type industries always reflect the current condition of and changes in the firm's physical and financial assets, but no mention is normally made of the current condition of and changes in human assets (Radchuck, 1981:113 and Black, 1980:78). Such is certainly the case in school system accounting. However, the financial records of any organization and especially trends in the financial data contain grave inadequacies and errors since human resources are ignored (Likert and Bowers, 1974:409).

This discrepancy in management information systems and accounting practices emphasizing physical assets and neglecting human assets is somewhat irrational when one considers the importance of the human assets in regard to organizational productivity and goal attainment. Etzioni (1974:475), for example, stated that, "Organizations are co-ordinated human efforts to realize specific goals." Perrow (1970:2-3) claims that even though organizations are made up of people, it is capital, land and labor markets that are the predominate considerations of management. Das and Das (1979:91) suggest that economists have recognized human resources as the most important asset. Gullett and Peddy (1978:60), Ebersberger (1981:37), Jurkus (1979:72) and Megginson (1968:5), claim the human factor is the most important element in a business enterprise. Hilton (1979:14) suggests the human resource might be the most important asset, particularly in service-oriented organizations. Katz (1974:412), perhaps, has identified the physical-human resource accounting discrepancy best:

> The major input into social organizations consists of people. The economist or the culturologist may concentrate on inputs of resources, raw materials, and technology. To the extent that human factors are recognized, they are assumed to be constants in the total equation and are neglected. At the practical level, however, as well as for a more precise theoretical accounting, we need to cope with such organizational realities as the attracting of people into organizations, holding them within the system, insuring reliable role performance...

In the words of Brummet, Pyle and Flamholtz (1973:531), "...a need exists, therefore, to develop an organizational accounting or information system which will reflect the current condition of and changes in the firm's human assets." The above writers are arguing for a more balanced approach to the measurement, reporting and management of organizational resources.

Education is a highly labor-intensive industry. Ironically, even though the nature of educational technology is more "people centered" than that of most other industries, educational management tends to emphasize acquisition, utilization and maintenance of physical and financial resources. In the 1950's, the notion of a more balanced approach to overall resource management was given impetus through Drucker's book, The Practice of Management (Morrison, 1972:8019). Since the 1950's, much progress has occurred in the theoretical and empirical aspects of physical and financial management, but there has been limited progress in the area of human asset management (Morrison, 1972:8019).

The recognition by management of the individual as a valuable resource has resulted in a restructuring of management, economic and organizational theory to include the Human Resource Accounting (HRA) construct. The notion of considering people as valuable assets, claim Dunn and Stephens (1972:208), is an old one, one which originated with Adam Smith's Wealth of Nations in 1776. Although economists, because of their concern with the well-being of a nation, were the first group to consider people as capital, Hermanson et. al. (1973:103), Dunn and Stephens (1972:209), Lev and Schwartz (1972:103), Brummet et. al. (1973;533), Dermer and Siegel (1974:90), and Jaggi and Hon-Shiang Lau (1974:163) all identify R. Likert, a social scientist formerly in charge of the University of Michigan's Institute for Social Research, as the father of HRA. Likert is credited with synthesizing the notion of human capital into a workable theory, and as a result developed Human Resources Accounting (Hermanson, et. al., 1973:169).

# HUMAN RESOURCES ACCOUNTING DEFINED

Because HRA is a relatively new construct, the concept has no clearly defined boundaries (Hermanson, et. al., 1973:170). Brummet et al., (1973:540) add that because HRA is in an early stage of theorizing and testing, a host of problems related to the concept need to be resolved. Harrel and Klick (1980:393) indicate empirical research is needed to test the impact of HRA information. As a result, researchers have tended to develop and interpret the concept and its tenets independent of other researchers (Myroon, 1976:3). The first general definition of HRA was provided by Likert, Brummet, Pyle and Flamholtz (Brummet, et al., 1969:iii); HRA is; "...the process of identifying, measuring and communicating information about human resources to facilitate effective measurement within an organization." The 1973 Committee on Human Resource Accounting (Hermanson, et al., 1973:169) did not change the purpose nor the intent of HRA, for they defined HRA as "...the process of identifying and measuring data about human resources and communicating this information to interested parties."

The first conference on HRA in 1969 established two purposes of HRA: to develop "...capabilities for measuring those human resource variables which significantly alter organizational performance over time," and a "...means of utilizing these data to improve organizational effectiveness" (Brummet, et al., 1969). The 1973 HRA Committee Report (Hermanson, et al., 1973:169) stated the purpose of HRA, "...is to improve the quality of financial decisions made both internally and externally concerning an organization." As well, the report suggested HRA should result in management's recognition of employees as valuable resources.

The 1974 HRA Committee Report (Bruns, et al., 1974:115) suggested that because the early work on HRA focused primarily on getting measurements of human resources into management and investor reports, the emphasis was too narrow and naive. The report asserted that HRA "...is better viewed as a part of the process of managing people in organizations," and as such, the purpose of HRA is, "...not merely to account but to improve the way people contribute to organizations, society and economic well-being." In essence, the present day HRA advocates are suggesting HRA can lead to a new paradigm for managing people which can result in an overall improvement of organizational effectiveness. Flamholtz (1974:15) represents this belief best for he describes HRA as the raison d'etre of resource management, and as such, "It can simultaneously provide the goal and the criterion for the management of human resources."

The underlying assumption of all the foregoing HRA "purpose" statements is that there are two complementary managerial aspects to HRA: financial and human. Financial management aspects of HRA are concerned with the dollar valuation and capitalization of the existing inventory of employed persons within an organization and any improvements or increase in dollar value that may accrue as a result of training or experience (investment variable). HRA financial management is also concerned with a monetary valuation of the "rate-of-return" of original dollar investments in human resources. The human resource management aspect is concerned with the measurement or valuation and improvement in HRA causal variables (such as managerial behavior, individual skills and competencies and leadership style), intervening variables (such as employee perception, motivation, attitude and subordinate peer behavior) and end result variables (such as satisfaction and productivity). Further elaboration of HRA, including basic and expanded models, is provided in Appendix A.

The literature concerning this restructured conceptualization of HRA claims the purpose of HRA is not only to measure and report the value of human capital to management but as well to have management recognize the value of the human resource, and more importantly, to improve "...the management of human resources so that the quantity and quality of goods and services are increased" (Bruns, 1974:116). Although HRA proponents assumed that monetary human resources measures had an advantage over non-monetary measures, research by Flamholtz (1976) suggested the opposite while Harrell and Klick (1980:399) demonstrated that monetary human asset measures do have an inherent advantage in competing for a decision maker's attention. A review of the literature suggests HRA theorizing and experimentation has been confined to industry. There is a need to determine the utility of HRA in an educational setting. Prior to the implementation of or experimentation with any management innovation like HRA, it is desirable to measure the attitudes and strength of attitudes of involved personnel so that appropriate strategies may be designed. Hence the need for this study.

## PURPOSE AND SIGNIFICANCE OF THE STUDY

The basic purpose of this exploratory-descriptive study was to ascertain and compare the perceived attitudes and strength of these attitudes held by various types of educational administrators in selected Alberta school jurisdictions toward HRA and the HRA causal, intervening and end-result variables. As well, the study predicted probable behavior patterns of statistically significant study groups toward the implementation of HRA and the HRA causal, intervening and end-result variables type of information. There are several reasons for such a study.

Theory building in HRA is in a preliminary stage. Bruns, et al., (1974:116), after a thorough review of HRA literature, concluded that no systematic collection of observations had been made to date. Das and Das (1979:91) assert that only a few organizations have systematically measured and recorded the value of human assets on a micro level and as a result, there is a need to further develop the HRA body of knowledge.

HRA is a contemporary managerial approach that has been confined to industry. If HRA is to be considered in service organizations like education and government, then it is important to ascertain the attitudes and conviction of these attitudes toward HRA. If implementation is feasible and desirable, then measurement of attitudes and strength of attitudes toward HRA should provide information that will assist management in designing appropriate awareness, interest, trial, dissemination and implementation strategies. It is possible that some aspects of HRA could be considered in educational management by the mid 1980's. For example, the Alberta Department of Education's Capital Fund Study Advisory Committee, after studying the possibility of including HRA in the proposed capital fund restructuring, decided not to include HRA but indicated that consideration by others would be warranted (August 16, 1978 minutes of the Capital Fund Study Advisory Committee).

The instrumentation developed for this study is applicable to any organization, whether public or private. Therefore,another purpose of this study was to develop a valid and reliable instrument for measuring the attitudes and strength of attitudes of employees in any organization that is seriously considering the implementation of HRA.

Manpower planning is rapidly becoming an integral part of human resources management in many organizations. HRA is also being advocated by some theorists and practitioners for use in manpower planning. For example, HRA can provide basic information for manpower planning in areas relating to skills, competencies, attitudes, loyalties, decision making ability and perceptions (Swann, 1978:309: Das and Das, 1979:92; Hilton, 1979:15; and Gullett and Peddy, 1978:60).

Finally, if HRA is to become an integral component of educational management, then it is important to know if certain kinds of school organizations or certain types of administrators require HRA more than others. For example, it may be that more complex school organizations require HRA more than do less complex ones; relationship-oriented administrators may require HRA more than do task-oriented administrators. It also may be that administrators at differing hierarchical levels could require different degrees of HRA.

## DEFINITIONS

### Human Resources Accounting

Human Resources Accounting is the process of accounting and managing information about human resources so as to improve the way people contribute to organizations, society and economic well being.

### HRA Types of Information

HRA types of information refers to various monetary and non-monetary information regarding human resources that can be identified, measured, communicated and managed in an organization, specifically causal (input), intervening (process) and end-result (product) variables.

Causal HRA Variables relate to "...independent HRA variables that can be directly or purposely altered or changed by the organization and its management..." (Likert and Bowers, 1974:406). For this study, the elements included as causal variables were managerial behavior, level of individual skills and competencies and leadership style.

Intervening HRA Variables "...reflect the internal state, health and performance capabilities of the organization" (Likert and Bowers, 1974:406). Since an impact on a causal variable does not produce an immediate direct result upon an end-result variable, intervening variables are the internal and directly unobservable psychological processes that account for the time lag effect (Kerlinger, 1964:44). The elements included in this study as intervening variables were subordinate-peer behavior, motivation, attitudes and loyalties.

End-result HRA Variables are the "...dependent HRA variables that reflect the results achieved by that organization" (Likert & Bowers, 1974:406). The elements included in this study are productivity and satisfaction.

**Dependent Variables**

These are the perceived attitudes (evaluative dimension semantic space plots) and strength of attitudes (potency dimension semantic space plots) of respondents toward HRA and the HRA causal, intervening and end-result variables type of information.

The evaluative dimension, which was factor one in the set of 13 questionnaire bi-polar adjective pairs, measured the attitude direction (cognitive belief) of the respondent toward HRA and the HRA causal, intervening and end-result variables. The evaluative dimension was operationally defined as the cognitive or belief aspect of attitude (based upon existing information and knowledge) that indicates the cognitive or belief feeling of a person in terms of approach-avoidance response dispositions (favorable/unfavorable or positive/negative feelings) toward the referent concept or sign. Meaning is given to the cognitive or belief part of the attitude by the direction chosen among the ten alternative bi-polar adjectives (quality of meaning) and the distance of the position scales checked (intensity of meaning).

The potency dimension, which is factor two in the set of 13 SD adjective pairs, measured the perceived strength, intensity or conviction of the respondent's attitude (cognitive belief) toward HRA, the HRA variables or each of the nine HRA concepts. The potency dimension was operationally defined as the affect or feeling aspect of attitude that indicates the intensity, strength or conviction of the cognitive belief of a person in terms of approach - avoidance response disposition (a strong/weak feeling) toward the referent concept or sign. Meaning is given to the affect feeling by the direction chosen among the three alternative bi-polar adjectives (quality of meaning) and the distance of the position scales checked (intensity of meaning).

In terms of this study, then, the semantic differential evaluative dimension provided a measure of the respondent's cognitive belief or attitude direction while the potency dimension provided a measure of the respondent's attitude strength, intensity or conviction.

## Independent Variables

An independent variable, stated Kerlinger (1964:39), "...is the presumed cause of the dependent variable, the presumed effect. The independent variable is the antecedent; the dependent variable is the consequent." The independent variables are leadership behavior style as measured by the Least Preferred Co-worker (LPC) instrument, level of perceived and mathematically determined organizational complexity and administrative position of the respondents.

## Leadership Style

Leadership style is "...a bi-polar construct referring to an underlying need structure of the individual which motivates his (the leader's) behavior in various leadership situations" (Fiedler, 1967:35). Leaders can be seen as being either task-oriented, where the primary need is to accomplish the goal of the task group, or as relationship-oriented, where the primary need is to develop and maintain good interpersonal relationships among the members (Martin, Isherwood and Lavery, 1976:88). The socioindependent or dual-styled leader has either a mixed motivational pattern or else a distinctly different leadership approach (Fiedler, 1978:91).

Task-Oriented Administrators are those administrators who score in the bottom third of the LPC scale, i.e., they describe their least preferred co-worker in a relatively negative sense (Fiedler, 1967:60).

Socioindependent or Dual-Leadership Administrators are those who score in the middle third of the LPC scale.

Relationship-Oriented Administrators are those respondents who score in the top third of the LPC instrument, i.e., they describe their least preferred co-worker in a relatively positive sense and hence obtain a high score (Fiedler, 1967:60).

## Organizational Complexity

Organization complexity is a structural characteristic of an organization which most commonly has horizontal differentiation, vertical differentiation, and spatial dispersion as the three main elements (Hall, 1975:143). Horizontal differentiation is defined as the number of individual or separate departments or divisons that function as distinct units in the central office or school while vertical differentiation is the depth of the hierarchy or the number of position levels in the authority structure of the central office or school. Spatial dispersion is defined generally as the number of individually administered schools or sites, including the central office.

This study used two different approaches to complexity: one mathematically derived through Thurstone's Force-Pair Comparison Technique and the other a single perceptual response item in the questionnaire. In regard to the mathematically derived measure, an organization (school or school system) was deemed to be relatively low on complexity when the respondent's score was in the bottom one-third of the composite complexity scores. High organizational complexity was deemed to exist when the respondent's score was in the top one-third of the composite complexity scores. Medium complexity was deemed to exist when the respondent's score was in the middle-third of the complexity scores.

In terms of perceived complexity, low complexity was judged to exist when a respondent indicated either "scarcely complex" or "somewhat complex"; high complexity was considered to exist when the respondent indicated either "very complex" or "extremely complex" and medium complexity was deemed to exist when the respondent indicated "quite complex" on the perceived complexity questionnaire item.

**Administrative Position**

Administrative position is the official position designation of the respondent as assigned by the elected officials of the respondent's school jurisdiction. A respondent was deemed to be a principal, secretary-treasurer or superintendent, as indicated in the questionnaire.

## THE PROBLEM AND SUB-PROBLEMS

The general purpose of this exploratory-descriptive study was to ascertain and compare the attitudes and strength of attitudes of various types of educational administrators in selected Alberta school jurisdictions toward HRA and the HRA variables. The first four sub-problems addressed the question of the attitude direction and strength of attitudes and their significant differences toward HRA by:

1. principals, superintendents and secretary-treasurers,
2. relationship-oriented, socioindependent, and task-oriented administrators,
3. administrators who functioned in low, medium and high complexity organizations (as derived numerically) and,
4. administrators who functioned in low, medium and high complexity organizations (self perception).

The last four sub-problems addressed the question of significant differences in the attitudes and strength of attitudes toward the HRA causal, intervening and end-result variables type of information by:

5. principals, superintendents and secretary-treasurers,
6. relationship-oriented, socioindependent, and task-oriented administrators,
7. administrators who functioned in low, medium and high complexity organizations (as derived numerically) and,
8. administrators who functioned in low, medium and high

complexity organizations (self perception).

As well, the study had a further purpose of predicting the probable behavior pattern of each significantly different study group in terms of the eight sub-problems.

## ASSUMPTIONS

The following assumptions were made:

1. The scales which were selected through factor analysis (most were initially developed by Osgood) were concept relevant, factor representative, well defined for the population of subjects and polar opposites.
2. The evaluative dimension of the SD measures the attitude or cognitive belief toward HRA and the HRA causal, intervening and end-result variables type of information.
3. The potency dimension of the SD (Semantic Differential) measures the strength, intensity or commitment of an attitude or affect feeling toward HRA and the HRA causal, intervening and end-result variables type of information.
4. The set of "types of information" specified in the questionnaire, in aggregate form, indicate the respondents' attitude and strength of attitude toward HRA.
5. The respondents' replies to the questionnaire reflect their own feelings and judgements.

## DELINEATION OF THE STUDY

### Delimitations

This study was delimited by the following:

1. All principals, secretary-treasurers and superintendents in all Alberta school jurisdictions other than those in the four systems in the cities of Edmonton and Calgary were included.
2. Only the SD evaluative and potency dimensions were included because the activity dimension was deemed irrelevant and insignificant for purposes of this study.
3. Only the respondents' perceived attitudes and strength of these attitudes toward HRA and its component variables and their differences were described.
4. Only three of the ten postulates identified through the axiomatic reduction technique were accepted for study.
5. Only the HRA causal, intervening and end-result variables were included while the investment and rate-of-return variables were excluded.

## Limitations

This study was limited by the following:

1. The findings are limited to the ability of the subjects to elicit accurate responses to various types of HRA information, without receiving any training or briefing on HRA.
2. Findings are limited to the point in time when the questionnaire data were collected, that is, November and December, 1976.
3. Applicability of the findings are restricted to the degree which the SD technique elicited authentic and accurate responses.

4. Changes in the constituent groups would render the data invalid.

## OUTLINE OF THE THESIS

Chapter II uses the axiomatic reduction technique to develop the conceptual framework from the literature review and provides the theoretical background relating to perception and attitude. The research design, sample selection, research procedure and statistical treatment of the data are described in Chapter III. Chapter IV describes the SD concept and dimensionality, selection of scales and concepts, three-phase pilot study, factor matching procedure and SD reliability and validity tests. The measurement methodology and analysis of the independent variables are described in Chapter V. Chapter VI deals with final study factor matching, transformation of data, data analysis and research findings. Chapter VII describes the HRA related behavioral propositions, identifies the associated eight probable behavior zones, predicts the probable behavior of each significantly different group in terms of the eight sub-problems and shows the behavior zones of all sixteen independent variable study groups. Finally, Chapter VIII summarizes the findings of the study, and presents the conclusions of the study and some implications for further research.

# CHAPTER TWO

# CONCEPTUAL FRAMEWORK OF THE STUDY

A conceptual framework, states Conant (Kerlinger, 1964:4) "... is a set of concepts interrelated by hypothetical and theoretical propositions." A major problem in developing a behavioral-science conceptual scheme, suggests Kaplan (1964:78), is the locus problem which is concerned with the specific or ultimate subject-matter for inquiry, the attribute space for its description and the conceptual framework or scheme within which hypotheses are to be formulated. Kaplan (1964:79) contends that a researcher may follow the autonomy principle of the conceptual base in selecting or developing a conceptual framework. The autonomy principle implies only one of two restrictions: it is capable of being checked by experience or it is capable of providing some guidance to action. Therefore, the purpose of this chapter is to develop a conceptual framework that provides a base and offers guidance into inquiring about attitudes and strength of attitudes toward HRA. The conceptual framework was developed by axiomatically reducing two sets of propositions from the related literature.

The first section of this chapter examines the framework of the axiomatic reduction technique. The second section describes the literature review relating to the conceptual framework. The third section illustrates the conceptual framework through the selection and rationalization of key HRA independent variables. The last section provides the theoretical underpinnings of perception and attitude.

## AXIOMATIC REDUCTION TECHNIQUE

Sociological research and theory deal with a great variety and complexity of social phenomena (Zetterberg, 1965:5). One way to organize these social phenomena, according to Simmel (Zetterberg, 1968:8), is to collect diverse information about the phenomena and ascertain the commonalities. The approach of deriving a body of systematically interrelated propositions has been referred to by Zetterberg (1965:1-34) as the axiomatic reduction technique. It is a method for identifying and collecting, defining or stating, ordering and reducing a body of diverse and complex propositions to arrive at postulates. The final results of systematic groupings of interrelated propositions are theories. The axiomatic reduction technique involves four phases: (1) developing an inventory of propositions, (2) reducing the inventory, (3) formulating hypotheses and (4) testing hypotheses.

### Inventory Development

The inventory phase involves three distinct steps: (1) collection of complex and varied propositions, (2) stating them according to direction of influence, pre-established linkage patterns and informative value to give meaning and (3) ordering the stated propositions. The collected propositions were given meaning first by determining the direction of influence. If the direction in which variates influenced each other was known or assumed, then one variate was designated as a determinant and the other as a result.

The second requirement for attaining precise meaning for a proposition was stating it in relation to an acceptable linkage pattern. Zetterberg (1965:14-17) identified six linkages between the determinants and resultants. First, a relationship can be reversible (if X, then Y; and if Y, then X) or irreversible (if X, then Y; but if Y, then no conclusion about X ). Second, a relationship may be deterministic (if X, then always Y), or stochastic (if X, then probably Y). Third, a relationship may be sequential (if X, then later Y) or coextensive (if X, then also Y). Fourth, a proposition could have a sufficient relationship (if X, then Y, regardless of anything else) or a contingent relationship (if X, then Y, but only if Z). Fifth, a relationship can be necessary (if X, then, and only then Y), or substitutable (if X, then Y; but if Z, then also Y). Finally, the sixth relationship is interdependent (combination of a reversible, sequential and contingent relations). The HRA propositions in this study are the first five types.

The third requirement for attaining meaning was to determine the informative value. The higher the informative value of a proposition, the greater the variety of events for which it can account (Zetterberg, 1965:21). A proposition of low informative value has few ways to be proven incorrect and hence cannot account for a large variety of events. The former are theoretical propositions while the latter are ordinary propositions. The HRA propositions identified in this paper are mostly ordinary propositions.

Regardless of how well the propositions were defined, "... the problem of ordering them becomes important as soon as they reach a number beyond two or three" (Zetterberg, 1965:26). Four methods of ordering were used. The first method flows from Bruns, et. al. (1974:116), who claim there are two types of observations about HRA: primary and secondary. Primary propositions relate to the effect or impact of an HRA variable upon the workers and the organization while secondary propositions refer to the impact of interventions upon the workers and the organization.

A second method of ordering (Zetterberg, 1965:26-31) is to list propositions as an inventory of determinants, an inventory of resultants, a chain pattern of propositions or a matrix of propositions. The HRA inventory in this study involved the first two types. However, primary propositions were classified as resultants while most secondary propositions were categorized as determinants. A resultant inventory occurs when the determinant (HRA information) is the same, but the dependent (resultant) variables vary. A determinant inventory occurs when the factors or independent variables (determinants) that bring about a particular result or affect a certain phenomenon (resultant is always the same) are systematically listed.

A third way of ordering a lengthy inventory is to use a logical format for stating propositions. Price (1968:8-9) provides such a format: organizations which have variable X will likely result in a better Y. The format for secondary-determinant propositions is: the greater the amount or level of X, then Y (the greater the productive capacity of an organization). As well, some propositions were stated in a conditional sense (Price, 1968:9) where exceptions were necessary: for example, if X, then Y, because of Z.

The fourth way of ordering propositions is to identify the propositions alphabetically by author (source) and to develop an alpha-numeric coding scheme. The first field was used to code primary-resultant (I) and secondary-determinant (II) propositions. The second field identified the first author this researcher located in the literature. The third field numerically identified the propositions attributable to each source.

### Inventory Reduction

Zetterberg (1965:31-34) discussed two ways to reduce an inventory of propositions to an axiomatic theory, a set of hypotheses or postulates: (1) definitional and/or (2) propositional reduction. Definitional reduction involves the aggregation of propositions that possess key terms. Propositional reduction involves the factoring of propositions with other propositions: some key propositions are chosen as postulates so that all other propositions or theorems are capable of derivation from the postulates. Normally, stated Zetterberg (1965:31), "... both manipulations are done at the same time."

## REVIEW OF RELATED LITERATURE THROUGH ORDERED PROPOSITIONS

The related literature is reviewed through the following set of HRA-related propositions which were ordered using the earlier noted four ordering methods. Although most of the 86 propositions are attributable to more than one source, the alpha-numeric coding structure developed for this study identifies the first author the researcher located in the literature. This alpha-numeric coding scheme served the purpose of conveniently ordering the large number of interrelated propositions. Additionally, each proposition is equally attributable to each referenced author.

### Part A: Inventory of Primary-Resultant HRA Propositions

#### A. Alexander

1.A.1 The use of HRA by an organization could lead to an improvement of employee lay-off decisions (Alexander, 1971:42; Black, 1980:81; Gullet and Peddy, 1978:64; Swann, 1978:308; Elias, 1971:405;

Peterson, 1972:22; Morrison and Liddon, 1972:16).

1.A.2 The use of HRA by an organization could lead to an improvement of manpower planning and development decisions (Alexander, 1971:43; Morrison and Liddon, 1972:16; Morrison, 1972:8023; Hilton, 1979:18; Das and Das, 1979:92).

1.A.3 HRA information will likely improve societal, national or provincial manpower and education policies (Alexander, 1971:44).

## B. Bruns

1.B.1 The use of HRA by an organization could lead to an improvement of the quality of investor decisions (Bruns, et al., 1974:118; Ebersberger, 1981:37; Chastain, 1979:16; Gullet and Peddy, 1978:64; Hermanson, et al., 1973:180; Lev and Schwartz, 1972:153).

1.B.2 The use of HRA by an organization could lead to a manager spending more money to develop human resources (Bruns, et al., 1974:121; Swann, 1978:308).

1.B.3 The use of HRA by an organization could result in better personnel decisions involving selection, hiring, placement, transfer, promotion, remuneration and dismissal of personnel (Bruns, et al., 1974:121; Peterson, 1972:22; Radchuck, 1981:115; Ebersberger, 1981:37; Gullet and Peddy, 1978:64; Das and Das, 1979:92; Swann, 1978:310).

1.B.4 The use of HRA by an organization could lead to an improvement of the way people contribute to organizations, society and economic well being (Bruns, et al., 1974:115; Swann, 1978:310).

## C. Burrell

1.C.1 The use of HRA by an organization could lead to improved resource allocation decisions (Burrell, 1969:88; Woodruff, 1970:16; Morrison and Liddon, 1972:16; Radchuck, 1981:116).

**D. Eggers**

1.D.1 The use of HRA by an organization could lead to increased organizational effectiveness (Eggers, 1971:28; Ebersberger, 1981:37; Hilton, 1979:185; Likert, 1967:154; Alexander, 1971:44; Pyle, 1969:23).

**E. Elias**

1.E.1 The use of HRA by an organization could lead to improved appraisal judgements of management by creditors and investors (Elias, 1971:40; Radchuck, 1981:116; Weiss, 1974:304-305; Likert, 1967:73).

1.E.2 The use of HRA by an organization could lead to improvement of employee performance appraisal decisions (Elias, 1971:40; Bruns, et al., 1974:120; Jauch and Skigen 1974:36; Black 1980:81; Hilton, 1979:18).

1.E.3 The use of HRA by an organization could lead to improved prediction of future earnings (Elias, 1971:40; Weiss, 1974:305; Lev and Schwartz, 1971:103).

1.E.4 The use of HRA by many organizations could lead to increased societal benefits (Elias, 1971:40; Sloann, 1978:311).

**F. Flamholtz**

1.F.1 The use of HRA by an organization could lead to an increase in the productive capacity of the organization (Flamholtz, 1972:666; Radchuck, 1981:116; Chastain, 1979:17; Likert and Bowers, 1974:413; Likert, 1961:69; Likert, 1967:84-95; Alexander, 1971:39; Miles, 1974:356).

1.F.2 The use of HRA by an organization could lead to improved management of human resources (Flamholtz, 1971:267; Alexander, 1971:39; Flamholtz, 1969:31; Bruns, 1974:116; Elias, 1971:40; Swann, 1978:308).

1.F.3 The use of HRA by an organization could lead to managers being better able to assess the impact of their decisions and behavior upon employees (Jurkus, 1979:73); Flamholtz, 1969:32).

1.F.4 The use of HRA by an organization could lead to improved decisions involving the acquisition, development and allocation of people (Flamholtz, 1969:33; Gullet and Peddy, 1978:64; Woodruff, 1970:161; Liddon and Morrison, 1972:16).

1.F.5 The use of HRA by an organization could lead to improved managerial performance by determining the return on investment derived from all of the firm's assets (Flamholtz, 1969:36; Radchuck, 1981:115; Hilton, 1979:15; Gullet and Peddy, 1978:64; Das and Das, 1979:92; Swann, 1978:312).

### G. Hermanson

1.G.1 The use of HRA by an organization could lead to an improvement in the quality of internal and external financial decisions (Hermanson, 1973:169; Gullet and Peddy, (1978:64; Newell, 1973:13; Blaine and Stanbury, 1971:71; Gilbert, 1974:302).

1.G.2 The use of HRA by an organization could lead to an increase in the scope of decision-making (Hermanson, et al., 1973:169).

1.G.3 The use of HRA in an organization could lead to improved decision-making by converting qualitative decisions into a more quantifiable framework (Hermanson, 1973:169) and hence increase management accountability (Jurkus, 1979:72).

1.G.4 The use of HRA by an organization could lead to a more accurate statement of the value of a firm's goodwill (Hermanson, 1973:179).

1.G.5 The use of HRA by an organization could lead to an improved cognitive attitude of a manager toward employees (Jurkus, 1979:73; Hilton, 1979:15; Hermanson, 1973:179; Bruns, et al., 1974:121).

## H. Likert

1.H.1 The use of HRA by an organization could lead to managerial improvement (Likert, 1967:154; Chastain, 1979:17; Woodruff, 1970:161).

1.H.2 The use of HRA by an organization could lead to the making of more accurate and higher quality decisions (Likert, 1967:154; Flamholtz and Kaumeyer, 1980:117; Gilbert, 1974:302).

1.H.3 The use of HRA in an organization could lead to an improved balance of fiscal management, i.e., financial, physical and human asset resources are all managed with equal priority (Likert, 1967:152).

1.H.4 The use of HRA by an organization could lead to management interpreting production more correctly (Likert, 1967:153).

1.H.5 The use of HRA by an organization could lead to improved employee productivity because subordinate perceptions and experiences would become progressively more favourable (Likert, 1967:93).

1.H.6 The provision of a great deal of human variable data to a manager for the first time could lead to confusion and dysfunctionality of the manager (Likert, 1961:220).

1.H.7 The greater the reporting of HRA data to each work group in a firm, the greater the productive capacity (Likert, 1961:206).

1.H.8 The use of HRA by an organization could lead to the manager being able to take corrective steps to maintain organizational effectiveness (Likert, 1961:74).

1.H.9 The use of HRA by an organization could lead to improved human resource outlay and replacement decisions (Likert and Bowers, 1974:411; Radchuck, 1981:115; Flamholtz and Kaumeyer, 1980:112; Das and Das, 1979:92).

1.H.10 Organizations which do not use HRA could have errors and major inadequacies in their financial records (Likert and Bowers, 1974:409).

## I. Robinson

1.I.1 The use of HRA by an organization could lead to increased productivity of the firm over the long-term life of that firm (Robinson, 1974:28).

1.I.2 The use of HRA could lead to more meaningful and improved managerial decisions (Robinson, 1974:29 and 31; Radchuck, 1981:115; Chastain, 1979:16).

1.I.3 The use of HRA by an organization could lead to error reduction in decision-making (Robinson, 1974:31).

## J. Stan

1.J.1 The use of HRA by an organization could lead to improved capital improvements decision-making (Stan, 1969:8; Robinson, 1974:30; Bruns, et al., 1974:121; Black, 1980:81).

### K. Weiss

1.K.1 The use of HRA by an organization could lead to improved internal decisions because HRA provides vital information for managerial decision-making (Weiss, 1974:309;Radchuck, 1981:115).

## Part B: Inventory of Secondary-Determinant HRA Propositions

All of the secondary-determinant HRA propositions are based upon the assumption that causal and intervening variables impact the end-result variables. As well, there is an interactive effect between and among these three variables.

### B. Likert (1961)

11.A.1 As productivity increases with participative leadership, employee attitudes increase (Likert, 1961:70).

11.A.2 As an organization increases in size and investment, the greater the need for accurate measurement of causal, intervening and end-result variables (Likert, 1961:70).

11.A.3 As an organization uses a more complex form of social organization, the greater the need for measurement of the human variables (Likert, 1961:70).

11.A.4 The more complex and larger an organization, the greater the cost of erroneous decisions (Likert, 1961:70).

11.A.5 The character, nature and type of causal variable can produce widely different trends in the intervening and end-result variables (Likert, 1961:70; Caplan, 1971:109; Brummet, et al., 1973:533).

11.A.6 An intervention in a causal variable could lead to a change in an end-result variable, but with a time lag (intervening) (Likert, 1961:74; Pyle, 1969:24; Likert and Bowers, 1974:406).

11.A.7 Events in the external environment could lead to a change in the end-result variable (Likert, 1961:74).

11.A.8 An increase in productivity could lead to a decrease in the value of the human assets (Likert, 1961:70-73).

11.A.9 The greater the loyalty of employees to an organization, the greater the productive capacity (Likert, 1961:192).

11.A.10 The greater the identification of members of an organization to its objectives, the greater the productive capacity (Likert 1961:192).

11.A.11 The greater the degree of confidence and trust of employees, the greater the productive capacity (Likert, 1961:193).

11.A.12 The better the character of the organizational structure, the greater the productive capacity (Likert, 1961:193; Pyle, 1969:24).

11.A.13 The greater the level of competence and skills of the human assets of a firm, the greater the productive capacity (Likert, 1961:193; Pyle, 1969:24).

11.A.14 The clearer the roles of individual members, the greater the productive capacity (Likert, 1961:194).

11.A.15 The greater the participation of people in decision-making, the greater the productive capacity (Likert, 1961:221).

11.A.16 The greater the meaningful involvement of the human assets of a firm in the communication, influence and goal-setting processes, the greater the productive capacity (Likert, 1961:221).

11.A.17 The greater the use of a supportive or relationship-oriented management style, the greater the use of HRA and hence the greater the productive capacity (Likert, 1961:62-71, 202; 1967:130-1, 154-5).

11.A.18 The greater the quality of a decision and the greater the motivation to implement the decision, the greater the results achieved (Likert, 1961:212).

A. Likert (1967)

11.B.1 The greater the level of intelligence and aptitudes of a firm's employees, the greater the productive capacity (Likert, 1967:148).

11.B.2 The greater the level of training of a firm's employees, the greater the productive capacity (Likert, 1967:148; Pyle, 1969:24).

11.B.3 The greater the quality of a firm's leadership, the greater the productive capacity (Likert, 1967:148; Likert, 1973:11).

11.B.4 The greater the quality of a firm's decision-making, the greater the productive capacity (Likert, 1967:148).

11.B.5 The greater the capacity of a firm to achieve co-operative teamwork the greater the productive capacity (Likert, 1967:148; Caplan, 1971:109; Radchuck, 1981:116).

11.B.6 The greater the capacity of a firm to achieve effective coordination, the greater the productive capacity (Likert, 1967:148; Likert and Bowers, 1974:413).

11.B.7 The greater the capacity of a firm to use experience and measurement to guide decisions, improve operations and introduce innovations, the greater the productive capacity (Likert, 1967:148; Likert and Bowers, 1974:413).

11.B.8 The greater the capacity of a firm to use employee differences for purposes of improvement the greater the productive capacity (Likert, 1967:148).

11.B.9 The greater the levels of felt responsibility of employees of a firm, the greater the productive capacity (Likert 1967:148).

11.B.10 The greater the motivation of a firm's employees, the greater the productive capacity (Likert, 1967:148; Likert and Bowers, 1974:413).

11.B.11 The greater the level of performance goals of a firm, the greater the productive capacity (Likert, 1967:148).

11.B.12 The greater the quality of upward, downward and lateral communication, the greater the productive capacity (Likert, 1967:148; Likert and Bowers, 1974:413).

11.B.13 The greater the quality of the control processes of a firm, the greater the productive capacity (Likert, 1967:148; Likert and Bowers, 1974:413).

11.B.14 The greater the morale of the employees of a firm, the greater the productive capacity (Likert, 1967:78).

11.B.15 The better the attitude of the employees of a firm, the greater the productive capacity (Likert, 1967:68).

11.B.16 Before showing any real functional worth to an organization, causal, intervening and end-result variables must be measured for at least three to five years (Likert, 1967:95).

11.B.17 The more favorable the attitude of the employees of a firm, the greater the productive capacity (Likert, 1967:149).

11.B.18 The greater the work of a firm involves the total man, the shorter should the successive measurement intervals be (Likert, 1967:149).

11.B.19 Managerial behavior influences subordinate perceptions

(Likert, 1967:82).

11.B.20 Managerial behavior influences organizational productivity (Likert, 1967:82).

11.B.21 Subordinate perceptions influence organizational productivity (Likert, 1967:82).

11.B.22 If the costs of each causal variable are measured, then it is possible to determine the favorable effects of each type of causal variable (Likert, 1967:83; Caplan, 1971:109).

## C. Pyle

11.C.1 The greater the measurement and reporting of investment variables, the greater the productive capacity of a firm (Pyle, 1969:26).

11.C.2 The greater the measurement and reporting of return-on-investment variables, the greater the performance capacity of the firm (Pyle,1969:26).

## D. Robinson

11.D.1 Identification and measurement of the costs of fringe benefits in human asset investment variables is related to reduced absenteeism, turnover and replacement (Robinson, 1974:31).

11.D.2 Identification and measurement of the costs of fringe benefits in human asset investment variables is related to a gain in organizational productivity (Robinson, 1974:31).

11.D.3 Identification and measurement of human asset investment variables is related to an increase in organizational productivity (Robinson, 1974:31).

11.D.4 Identification and measurement of human asset investment variables (costs) is related to gains in employee productivity

(Robinson, 1974:31).

11.D.5 The better the utilization of the human resources of a firm, the more successful the firm (Robinson, 1974:26).

### Axiomatic Reduction of Primary-Resultant HRA Propositions to Postulates

By using definitional and propositional axiomatic reduction techniques simultaneously, the following set of axiomatic theorems or postulates were developed from the inventory:

P.1 The use of HRA by an organization could lead to improved decisions and accountability. Previously identified propositions which relate to this postulate are:

1.A.1
1.A.2
1.B.1
1.B.3
1.C.1
1.E.1
1.E.2
1.E.3
1.F.4
1.G.1
1.G.2
1.G.3
1.G.4
1.H.2
1.H.9
1.H.10
1.I.2
1.I.3
1.J.1
1.K.1

P.2 The use of HRA by an organization could lead to improved management of human resources. The propositions which pertain to this postulate are:

1.B.2
1.F.2
1.F.3
1.G.5

P.3 HRA could lead to improved societal public policies. The previously identified propositions which are affiliated with this postulate are:

1.A.3
1.B.4
1.E.4

P.4 The use of HRA by an organization could lead to improved managerial and subordinate performance. The propositions which relate to this postulate are:

1.F.5
1.H.1
1.H.3
1.H.4
1.H.5
1.H.8

P.5 The use of HRA by an organization could lead to increased production capacity. Propositions 1.F.1, 1.H.7 and 1.I.1 pertain to this postulate.

P.6 The use of HRA by an organization could lead to increased organizational effectiveness. Proposition 1.D.1 relates to this postulate.

Proposition 1.H.6 was discarded for it did not fit into the reduction framework--it related more to the process of utilizing HRA.

### Axiomatic Reduction of Secondary-Determinant HRA Propositions to Postulates

By simultaneously using definitional and propositional reduction techniques, the following set of HRA postulates were developed:

P.7 The greater the positive level or value of human resource variables (investment, causal, intervening, end-result, rate-of-return and external environment), the greater the capacity for organizational productivity and effectiveness. The previously identified propositions which relate to this postulate are:

11.A.10
11.A.11
11.A.12
11.A.13
11.A.14
11.A.15
11.A.16
11.A.18
11.B.1
11.B.2
11.B.3
11.B.4
11.B.5
11.B.6
11.B.7
11.B.8
11.B.9
11.B.10
11.B.11
11.B.12
11.B.13
11.B.14
11.B.15
11.B.16
11.B.17

P.8 The greater the complexity of an organization, the greater the need for HRA. Propositions 11.A.2, 11.A.3 and 11.A.4 relate to this postulate.

P.9 The more a manager's leadership style is participatory or relationship-oriented, the greater the identification, measurement and use of human resources accounting information. Propositions 11.A.17 and 11.B.18 relate to this postulate.

P.10 Human resource variables are interrelated through an interactive and complex cause-effect relationship. The propositions which pertain to this postulate are:

11.B.19
11.B.20
11.B.21
11.A.1
11.A.5
11.A.6
11.A.7
11.A.8
11.C.1
11.C.2
11.D.1
11.D.2
11.D.3
11.D.4
11.D.5

Propositions 11.A.16 and 11.A.22 were eliminated for they did not fit the definitional framework. The complex interactive cause-effect interrelationships of the HRA variables are illustrated in Figure 2.1.

### Formulation of Testable Hypotheses

2

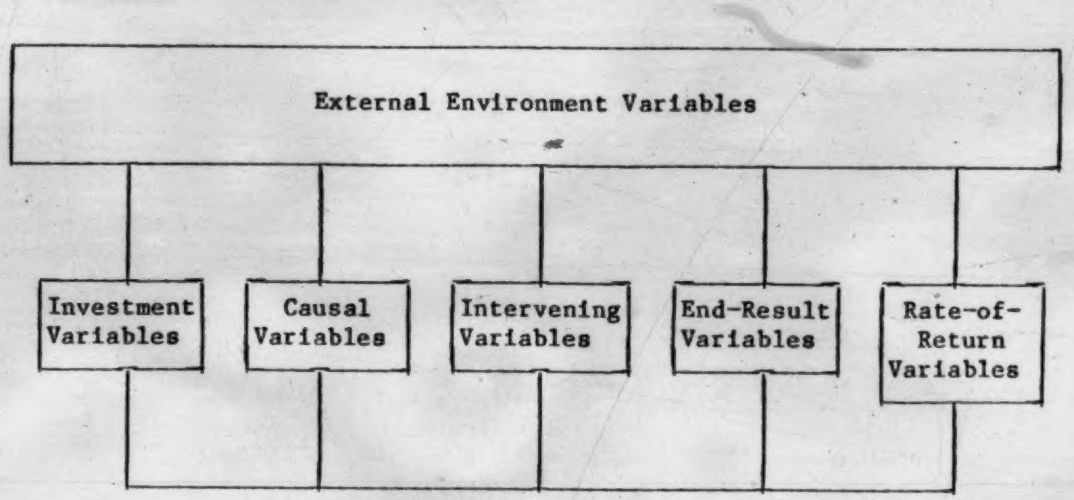

External Environment Variables
Investment Variables
Causal Variables
Intervening Variables
End-Result Variables
Rate-of-Return Variables

Figure 2.1 Interactive Relationships Among Five HRA Variables and the External Environment.

From the set of ten postulates nine hypotheses were derived. Since this is an exploratory-descriptive study, the following hypotheses serve no purpose other than to illustrate the end-result of the axiomatic reduction technique and to establish them for testing in some future HRA study (P.10 was excluded because it was not a testable hypothesis):

H.1 Quality of decisions varies directly with HRA.

H.2 Effective management of human resources varies directly with HRA.

H.3 Societal well being varies directly with HRA.

H.4 Management performance varies directly with HRA.

H.5 Productive capacity varies directly with HRA.

H.6 Organizational effectiveness varies directly with HRA.

H.7 Organizational productivity and effectiveness vary directly with the positive value of human resouces variables.

H.8 The need for HRA varies directly with the complexity of an organization.

H.9 The need for HRA varies directly with relationship-oriented or participatory style leadership.

## DERIVATION AND APPLICATION OF THE CONCEPTUAL FRAMEWORK

### The Conceptual Framework

Postulates 7, 8 and 9 were selected for study. The selected postulates lead to the establishment of the conceptual framework: the independent and interactive effects of organizational complexity, leadership style and administrative positions(independent variables) on the perceived attitudes (evaluative dimension)and strength of the attitudes (potency dimension) toward HRA (dependent variable). The conceptual framework provides the research design for investigating the major problem.

### HRA Dependent Variables

This study was delimited to include only the causal, intervening and end-result variables of Human Resources Accounting.

### Independent Variables

**Leadership Style.** As suggested by postulate P.9, the greater the disposition of a manager toward a participatory or relationship-oriented leadership style, the greater the inclination of that administrator to identify, measure and utilize HRA. Because leadership style was identified as one postulate and because of the far reaching implications of this postulate in educational organizations, leadership style was chosen as an independent variable.

**Organizational Complexity.** Organizational complexity, according to Hall (1975:143), is a structural characteristic of an organization which commonly has three main elements: vertical differential, horizontal differential and spatial dispersion. Complexity was chosen as an independent variable for study because it surfaced as one of the axiomatically reduced postulates (number 8), can be numerically and perceptually measured, and could be an important consideration in implementing HRA in a school organization.

Administrative Position. The administrative positions of principal, superintendent and secretary-treasurer were chosen as the third independent variable since these three groups would be major players in any implementation considerations and are easily determined.

Rejection of Remaining Postulates. Postulates P.1 to P.6 and P.10 were not included because (1) they are difficult to measure, (2) they would better be handled in second-phase testing, (3) they are of less importance to the focus of this study and (4) this research is delimited to being an exploratory-descriptive study.

### Graphic Representation of the Conceptual Framework

As indicated in the literature review, 86 propositions were developed; 38 in the primary-resultant inventory and 48 in the secondary-determinant inventory. The 38 primary-resultant propositions were reduced to six postulates while the 48 secondary-determinant propositions were reduced to four postulates. Of these 10, three (numbers 7, 8 and 9) were chosen for study: HRA components as the dependent variable and leadership style, organizational complexity and administrative position as the three independent variables. The conceptual framework (Figure 2.2), as developed through the axiomatic reduction technique, is useful because it provided a way to organize the study.

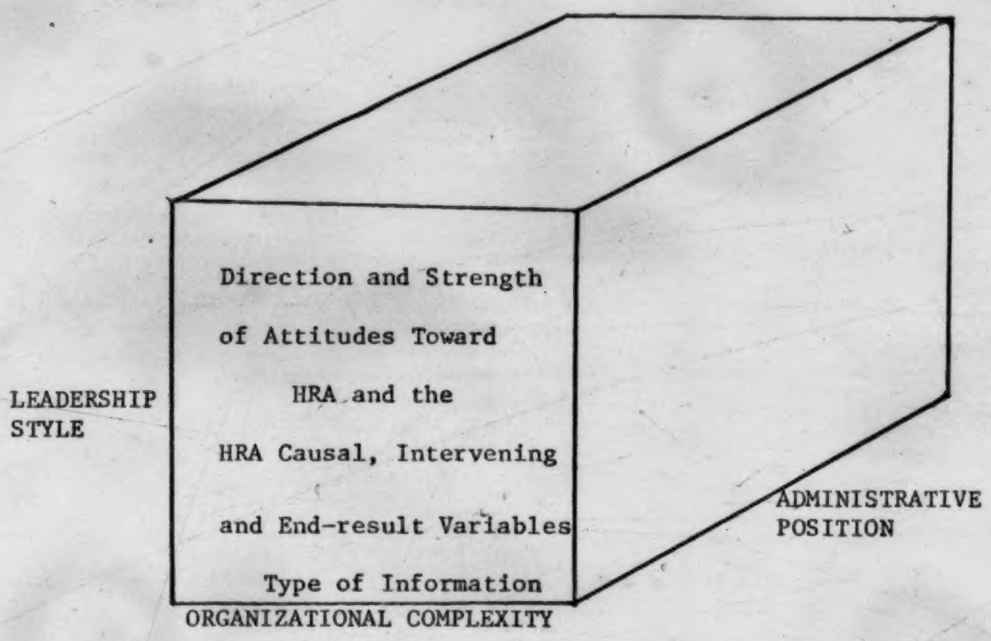

Direction and Strength
of Attitudes Toward
HRA and the
HRA Causal, Intervening
and End-result Variables
Type of Information
LEADERSHIP STYLE
ADMINISTRATIVE POSITION
ORGANIZATIONAL COMPLEXITY

Figure 2.2 Graphic Representation of the Conceptual Framework

## ATTITUDE AND PERCEPTION

Perception and attitude are important concepts of relevance to this study. Perception underlies the process by which respondents were able to react to and complete the HRA attitude and strength of attitude, LPC and organizational complexity sections of the questionnaire. Attitude is important because the study measures attitude and strength of attitude. As shown in Appendix B, perception, attitude and meaning are all inextricably linked.

### Perception

Perception is not merely a reaction to a stimulus as Dewey and Bentley pointed out, but rather, it is a "transaction" with the environment as suggested by Cantril (Nord, 1972:27). Garner, Hake and Eriksen (1973:637) defined perception in the traditional sense by stating it is an intervening process between stimuli and responses in terms of Perceptual System - Response System, while Van Dalen (1979:82) declares "Perception is the art of linking what is sensed with some past experience to give the sensation meaning". All definitions of perception emphasize an interaction, a transaction or an interacting link between the perceiver and the environment.

There appear to be two distinctly different schools of thought regarding perception theory; the traditional, simple behaviorist view (S-R and S-S models), and what Osgood (1964:184) has labelled the "Black Box" theorists or what Zalkind and Costello (1974:225) refer to as the "New Look" theorists such as C.E. Osgood (1964:184 - 210), J.E. Bruner (1964:225 - 256), and Cantor and Mischel (1979:4-521). Traditional behaviorists take the view that perception is the result of a relatively simple interaction or intervening process between the stimulus and response. The "New Look" or "Black Box" psychologists argue that interaction is much more complex and involves the entire social world and subjective influences such as needs, values, cultural background and interests. Recent writings by researchers such as Cohen (1981:441-452),Wyer and Hartwick (1980:242-285), Cantor and Mischel (1979:3-52), and Cook (1979) accept the "New Look" model of perception.

Warr and Knapper's (1968:20) model was accepted as the most appropriate because: (1) it represents all the aspects of perception that have been advanced by the "Black Box" theorists, (2) a comprehensive set of research findings substantiates each component of the model (credibility and acceptability), (3) it is comprehensive, and (4) it is appropriate for this study in that Warr and Knapper's schematic perception model underlies the SD, Law of Comparative Judgement, the LPC, organizational complexity and explains the response rate. Warr and Knapper's model is shown in Figure 2.3.

Warr and Knapper's model does not represent a sequential flow of information; rather, it represents a dynamic and interactive set of activities that may be instantaneous or extended in time. First, the perceiver receives at least three types of information: (1) present stimulus, (2) present context and (3) stored stimulus information. Once the stimulus appears, the perceiver selects some information about the stimulus. In addition, the perceiver also selects aspects from the present context (social, physical and behavioral aspects within which the object, person or concept is perceived) and places this information in juxtaposition with the selected information aspects of the stimulus. Third, the perceiver uses stored stimulus information (information available through a circumscribed set of memory material within the perceiver about the stimulus) and hence the perceiver begins to give meaning to the stimulus and the attitude structure begins to form.

The input selector stage refers to the selection of only certain aspects of the above three types of information which are based upon the current state and stable characteristics of the perceiver. The perceiver's current state refers to the perceiver's mood, affective state, or the cues that are noticed (a transitory state of perceptual readiness). The stable characteristics include perceiver characteristics such as personality attributes, cognitive style, age, beliefs, sex, attitudes, needs and drives that affect the input selector.

The selected information is then handled by the processing center. As part of processing, the perceiver has general guiding

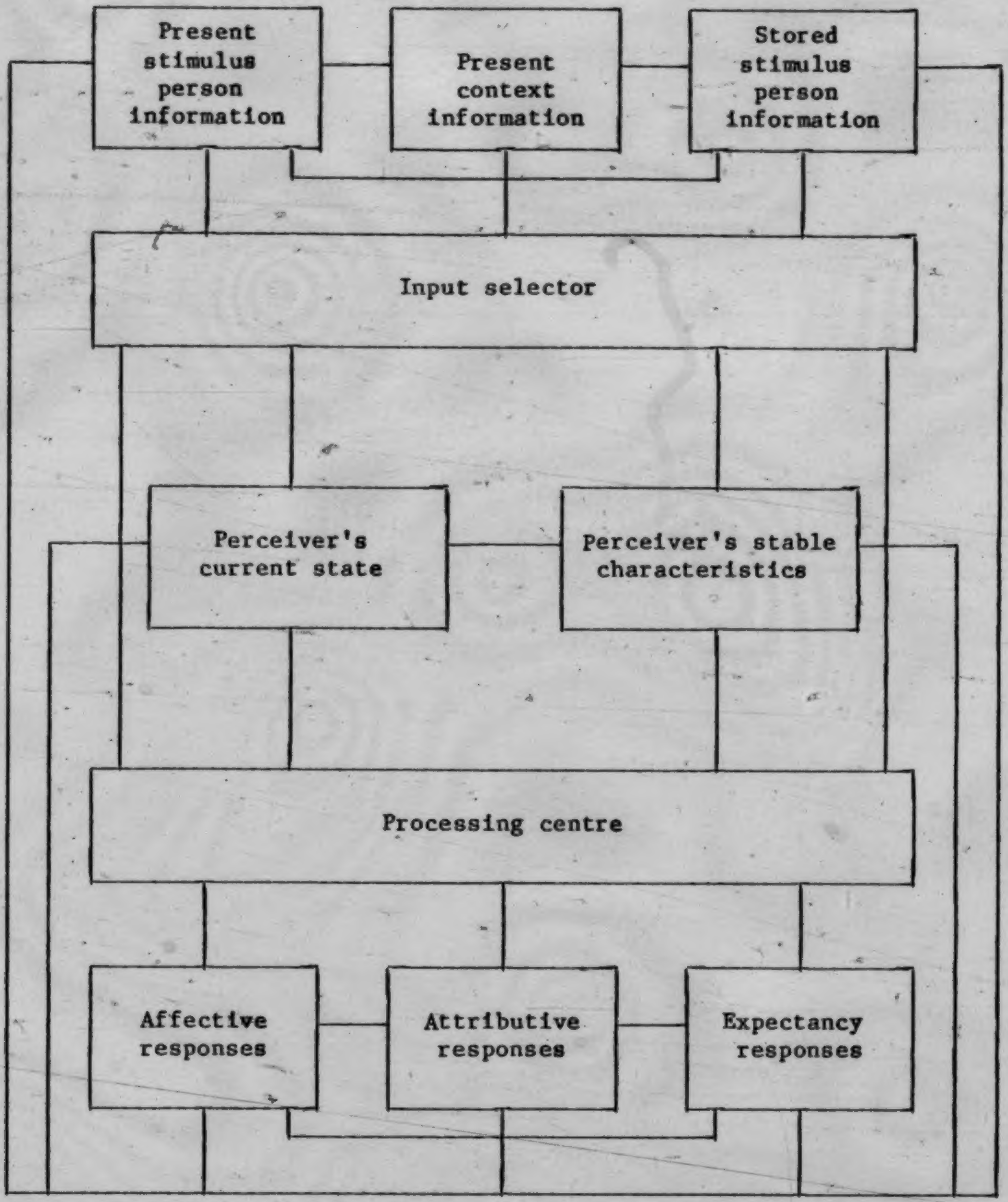

Present stimulus person information
Present context information
Stored stimulus person information
Input selector
Perceiver's current state
Perceiver's stable characteristics
Processing centre
Affective responses
Attributive responses
Expectancy responses

Figure 2.3 Warr and Knapper's (1968) Schematic Representation of Perception

principles and decision rules that allow the center to transform its activities through filtering or gating, in order to develop coherent, consistent and patterned structures with respect to the given stimulus.

The final components relate to three different, yet interrelated types of responses that result in a judgement: affective, attributive and expectancy responses. Attributive responses refer to the results attained in the processing center from classifying, categorizing and comparing (attribution) sets of selected information. Expectancy responses refer to a range of expectancies (needs and set) or predictions that are related to the attributive responses. Finally, affective responses refer to the emotional ways a perceiver responds to a stimulus. Collectively, the three responses give an indication of a response, behavior tendency or attitude. Appendix B provides more detail pertaining to perception.

**Attitude**

Osgood, Suci and Tannenbaum (1958:190) defined attitude as a predisposition to respond and "...implicit processes having reciprocally antagonistic properties and varying in intensity," and as such, attitudes have both direction and intensity in semantic space.

Attitudes, stated Travers (1978:184), "...are complex structures underlying behavior that result in behavior related to the approach or avoidance of particular classes of objects or situations." Scott and Cummings (1973:71) aver that attitudes, "...obviously refer to organismic or internal mediational processes as determinants of behavior." Rhine (1964:493) defined attitude, "...as a concept with an evaluative dimension." Further, Thorndike and Hagen defined attitude in several ways: "...reactions for or against the people, the phenomena, and the concepts that make up society" (1969:28); "...tendencies to favor or reject particular groups of individuals, sets of ideas, or social institutions" (1969:382); and, "Feeling of favorableness or unfavorableness toward some group, institution or proposition (1969:644). All three of the Thorndike and Hagen definitions clearly indicate that attitude is a positive (for, favor and favorableness) or negative (against, reject, unfavorableness) feeling, tendency or reaction.

Travers (1978:184-5) contends that attitudes have three main components: cognitive or belief, affect or feeling and action. The cognitive attitude component refers to the knowledge a person has about the class of objects or referent toward which the person has an attitude. The affect or feeling component refers to the way a person feels about the referent while the action component refers to the readiness for action that may stem from the attitude.

Rhine (1964:486), in reviewing numerous definitions of attitude, observed that, "No one definition seems clearly superior solely on logical grounds; if it were otherwise, there would not be so many alternatives." In attempting to accept or prepare an appropriate definition, a researcher "...seeking a guide for his research among many alternatives, looks for a construct with heuristic and predictive value, particularily a construct which leads to informative research" (Rhine, 1964:487). The research philosophy of operationalism provides an important thesis regarding operational definitions, "There is an important relationship between the meaning of a term and the instruments and procedures that one would use to see whether the term applies to a particular situation and, if so, how" (Ennis, 1973:651). The most rigorous approach to providing an operational definition (Ennis, 1973:651) is through "providing implication relationships among operations, observations and the concept in question." Hence, the definitions of Osgood, Suci and Tannenbaum (1958:189-199) and Travers

(1978:184-5) were used to provide an operational definition of attitude since they relate the instrumentation and procedures to the concept in question and the expected observations. By examining the key common traits displayed in the definitions in Appendix B, the following operational definition was designed and used:

> An attitude, which consists of three aspects (cognitive, feeling and action), is a reciprocal antagonistic feeling, predisposition or belief toward a sign, person, concept or object represented in semantic space which involves some form of internal mediation process and results in a tendency or disposition toward a certain response, action or behavior.

## SUMMARY

This chapter first examined the framework of the axiomatic reduction technique. By applying the modified axiomatic reduction technique to a review of HRA-related literature, ten postulates were derived from 86 propositions. The selected posutlates led to the establishment of the conceptual framework in section three. Postulate seven, which asserted that the greater the positive value or level of human resource variables, the greater the capacity for organizational productivity and effectiveness, formed the basis for the dependent study variable. Postulates eight and nine identified the independent variables of organizational complexity and leadership style. The third independent variable chosen was administrative position. The theoretical underpinnings of perception and attitude were provided in the last section since they are crucial concepts to this study.

# CHAPTER III

## RESEARCH DESIGN, METHODOLOGY AND DATA TREATMENT

The choice of research methodology for the study was made with a view to ensuring maximum data reliability and validity. The first section describes the research design while the second part deals with sample selection. The third section discusses the research procedures used while the fourth section describes the statistical treatment of the data. Appendix C provides information on questionnaire distribution, response rates and the demographic characteristics of the respondents.

## RESEARCH DESIGN

According to Kerlinger (1964:301), "Design is data discipline. The implicit purpose of all research design is to impose controlled restrictions on observations of natural phenomena." Factorial design, "...where two or more independent variables are juxtaposed in order to study their independent and interactive effects on a dependent variable" was chosen (Kerlinger, 1964:325; Van Dalen, 1979:236-263;Tuckman, 1972:109-113; Wiersma, 1969:233-236; Winer, 1962:252-236, and Wise, Nordberg and Reitz, 1967:135-137). There are two advantages in using factorial design over alternate designs (Scott and Wertheimer, 1962:253; Wise, Nordberg and Reitz, 1967:137-8; Travers, 1978:281; and Wiersma, 1969:235): (1) the single design is more economical and (2) it enables the researcher to investigate and assess the interactive effects of several independent variables simultaneously. In addition, it helps in defining the research problems and subproblems.

A 3 x 3 x 3 factorial design model was used as depicted in Figure 3.1. The three independent variables are leadership style, level of organizational complexity and administrative position. The dependent variable is the perceived attitude and strength of attitude toward HRA. Figure 3.2 illustrates the factorial design in the fashion displayed by Van Dalen (1979:262).

## SELECTION OF THE SAMPLE

The population in this study was defined as all the principals, superintendents and secretary-treasurers functioning in Alberta schools excluding those in the Edmonton and Calgary public and separate school jurisdictions, on November 5, 1976. The finite population was used as the sample for the following reasons: (1) to reduce sampling error; Kerlinger (1964:61) suggests using as large a sample as possible, (2) the cost and effort associated with gathering data from the population were not prohibitive, (3) to eliminate bias, (4) the sample was small enough so that data collection and analysis would be efficient, (5) the small number of superintendents and secretary-treasurers necessitated using that entire population since all respondents would not reply, and (6) respondents would not complete all test items.

## DATA COLLECTION: INSTRUMENT SELECTION AND DEVELOPMENT

This exploratory-descriptive study is survey research because it dealt with "what is" rather than with "why it is so." Wiersma (1969:271) asserts that survey studies "... deal with how people feel or perceive and how they behave...."Survey research, claims Kerlinger (1965:407) has the advantages of wide scope, yielding large amount and

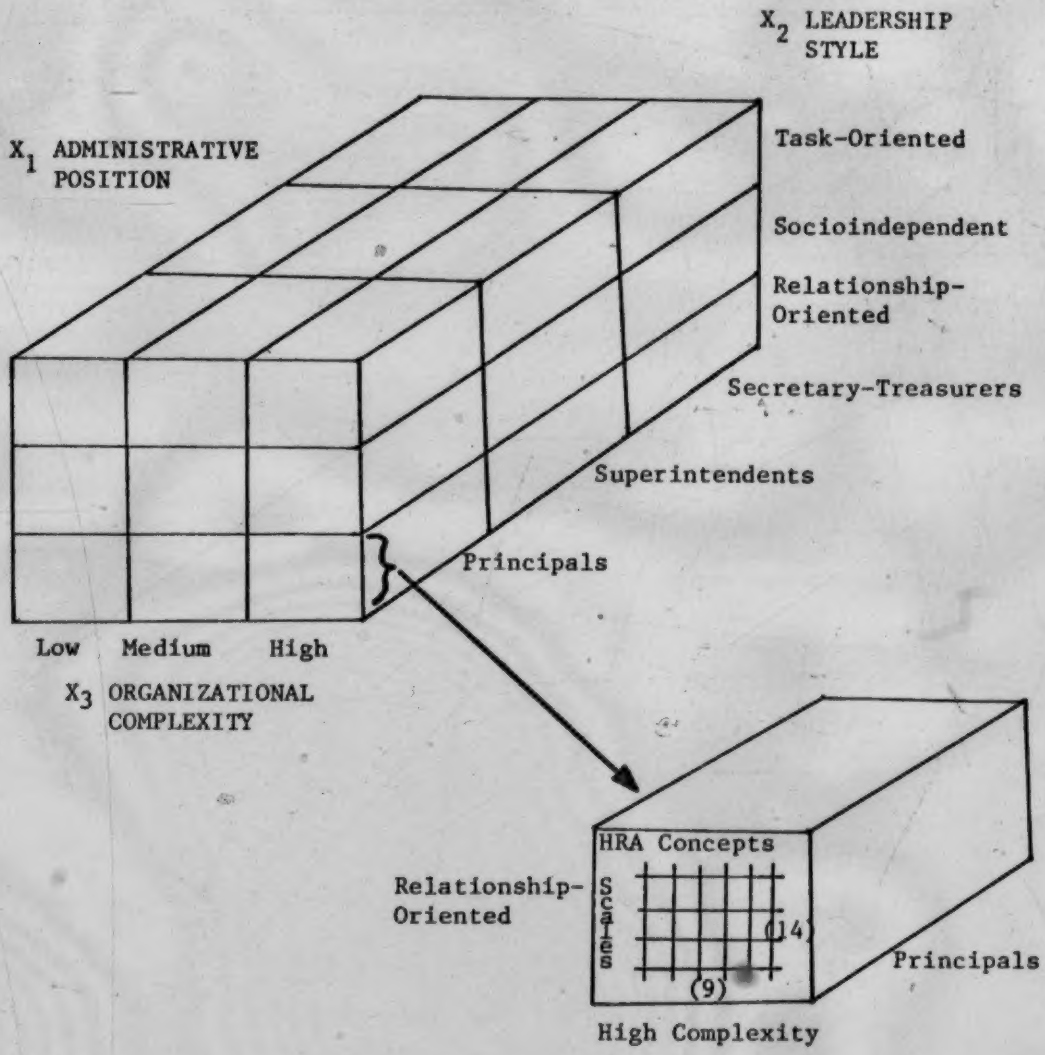

X$_2$ LEADERSHIP STYLE
X$_1$ ADMINISTRATIVE POSITION
Task-Oriented
Socioindependent
Relationship-Oriented
Secretary-Treasurers
Superintendents
Principals
Low
Medium
High
X$_3$ ORGANIZATIONAL COMPLEXITY
HRA Concepts
Relationship-Oriented
Scales
(14)
(9)
Principals
High Complexity

Figure 3.1: Factorial Research Design (3 x 3 x 3) Model For This Study.

quality of information and accurate information within sampling errors.

### Survey Research Classification Model and Selection

Wiersma (1969:273) asserted there are three key criteria that should be applied in determining the direction for survey research as depicted in Figure 3.3: nature of variables, group measured, and data collection. If a survey study involves the tabulation and classification of tangible variables, it is called status survey

| ($X_1$) Administrative Position | ($X_2$) Leadership Style | (X3) Organizational Complexity | | |
|---|---|---|---|---|
| | | LOW | MEDIUM | HIGH |
| Principal | Task | | | |
| | Socioindependent | | | |
| | Relationship | | | |
| Superintendent | Task | | | |
| | Socioindependent | | | |
| | Relationship | | | |
| Secretary - Treasurer | Task | | | |
| | Socioindependent | | | |
| | Relationship | | | |

Figure 3.2 Factorial Design Chart of This Study

(Wiersma, 1969:273). This study is survey research since it measures people's perceptions, attitudes and feelings in connection with sociological and psychological variables. Second, this study used the population as the measuring group. Although the interview process is a powerful technique, the schedule is difficult to construct, it is very time consuming to conduct and very costly (Kerlinger, 1965:395). The mail questionnaire, then, was chosen as the method for data collection. In terms of Wiersma's survey classification model, this study can be classified as a population-questionnaire-survey research study.

**Questionnaire Development Theory**

Blalock (1970:49) states there are three major methodological concerns regarding the mailed questionnaire: data standardization, generalizability of results and rigorous data analysis procedures and

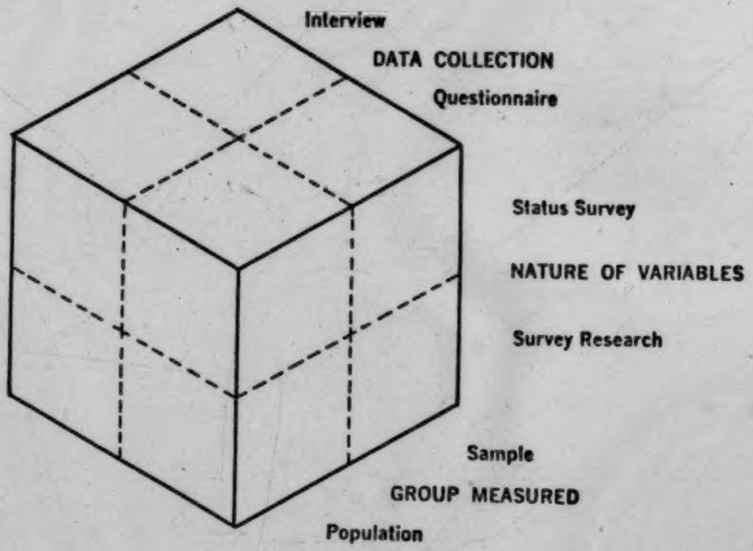

Interview
DATA COLLECTION
Questionnaire
Status Survey
NATURE OF VARIABLES
Survey Research
Sample
GROUP MEASURED
Population

Figure 3.3 Wiersma's 2x2x2 Research Classification Model

criteria. Standardization of data is important so that the study could be replicated at a later time. Since results generalization is associated with sample selection and analytical procedures, only data standarization will be discussed here. Data standardization is obtained through a rigorous approach to selection and development of the questionnaire.

The type of questions in the questionnaire determines the kind of data supplied by respondents (Backstrom and Hursh, 1963:67). Backstrom and Hursh (1963:67-109) identified eight considerations for questionnaire development: (1) preparation for writing the questions, (2) deciding what to ask, (3) length of questionnaire, (4) kinds of questions, (5) form of the questions, (6) content of the questions, (7) sequence of questions, and (8) critique of questions. Good (1972:231) described nine criteria for questionnaire construction: (1) it must be short enough so that the respondent will not reject it because of time, (2) it must be sufficiently interesting and face appealing so as to motivate the respondent to complete it, (3) questions should strive for some depth to the response in order to avoid superficial replies, (4) questions should not be too suggestive nor unstimulating, (5) questions should strive for responses that are definite but not mechanically forced, (6) questions should not be embarrassing nor threatening, (7) questions should not raise suspicion by the respondent that there is a hidden purpose, (8) questions should not be too narrow, restricted or limited in their scope, and (9) responses must be valid and the question should provide only the data for which the questionnaire was designed. Each of the above criteria and considerations were taken into account when designing the study questionnaire.

### Structuring and Developing the Questionnaire

A thorough review of the literature pertaining to this study revealed that an instrument existed for measuring leadership style. No instrument existed for measuring attitudes and strength of attitudes toward HRA, but a very powerful generalized technique called the Semantic Differential (SD) existed for measuring attitudes and strengths of attitudes toward any concept. Administrative position was included as a demographic questionnaire item. Finally, no specific instrument existed for determining a composite measure of organizational complexity as defined for purposes of this study. Consequently, HRA attitudes and organizational complexity instruments had to be developed.

The research design dictated the need for structured data in three distinct areas: (1) dependent variable (attitudes and strength of attitudes) (2) independent variables, (administrative position, organizational complexity and leadership style), and (3) certain demographic data. The SD technique was chosen for measuring the dependent variable. More detail is provided on the SD methodology and instrumentation, including the pilot studies, in Chapter Four. The development of the numeric measurement of organizational complexity as well as the demographic data associated with the independent variables is included in Chapter Five.

Demographic Data. Backstrom and Hursh (1963:97) stated that most surveys ask some questions that deal with demographic characteristics that could be considered as personal items. As illustrated in Appendix K, seven demographic items (items 2 - 8) in addition to administrative position, were structured for inclusion in the study: (1) school district type, (2) school district number, (3) school code number - for principals only, (4) sex, (5) age, (6) training, and (7) experience. School district type and school code number were included for purposes of double-checking identification provided by respondents, ensuring correctness of stated position and district type responses and assisting in follow-up procedures.

HRA Attitudes and Strength of Attitudes. One approach to measuring attitudes that is being used more widely in recent years, avers Travers (1978:324), is Osgood's Semantic Differential technique. The SD scales, reports Van Dalen (1979:150), "... are a simple, useful, and versatile tool for collecting data." One of the advantages of the SD is that it:

> Provides a method of measuring indirectly these perceptions by asking subjects to rate concepts such as superintendent or curriculum on several scales, usually seven point scales with

> bipolar adjectives, such as 'good' and 'bad', located at each end. (Van Dalen, 1979:149)

Osgood, Suci and Tannenbaum (1958:195) stated and are supported by Kerlinger (1965:508 and 509) that, "...it is apparent that the semantic differential may be used as a generalized attitude scale."

Travers (1978:325) noted that a study should usually modify the dimensions and scales developed by Osgood since the types of bipolar scales that can be developed are infinite in number. This study used 24 adjective pairs in the initial pilot stage and through a series of pilots revised and reduced these to 14 scales. Van Dalen (1979:149) and Kerlinger (1965:569) suggested that each SD dimension is normally measured by at least three separate scales. As a result of a high cross factor loading, one of the potency dimension scales in the final study was dropped a priori and hence only 3 scales were used to measure the potency dimension while the original 10 evaluative dimension scales were retained.

Administrative Position. Three types were chosen for study: principal, superintendent and secretary-treasurer. The first item in the questionnaire asked each respondent to identify the administrative position presently occupied.

Numerically Derived Organizational Complexity. Since an instrument that provides a composite measure of complexity could not be located, a section of the questionnaire was devoted to gathering data for developing an approach to deriving a composite complexity measure.

The complexity of an educational organization has been defined by Hall (1975:143) as a structural characteristic which most commonly has horizontal differentiation, vertical differentiation and spatial dispersion as the three main elements. Price (1972:70) defined complexity as the degree of structural differentiation within a social system, while Hall, Haas and Johnson (Price 1972:71) defined complexity as "... the degree of internal segmentation, number of separate parts of the organization as reflected by the division of labour, number of hierarchical levels, and spatial dispersion of the organization...." The existence of these three elements is supported by researchers such as Hage and Aiken (1970:33), Campbell and Akers (Champion, 1975:87) and Blair (Azumi and Hage, (1972:179). Hall's three determinants were accepted as appropriate for this study.

The main method for measuring complexity, averred Azumi and Hage (1972:226), is through observing configuration or, "... counting its most visible aspects", or elements. The advantage of configuration measurement is that one is not likely to make many mistakes counting the number of departments while the main disadvantage relates to the considerable differences of opinion that exist regarding which particular aspects of elements contribute most to complexity.

Hall, Johnson and Haas (1972:169) suggested that the horizontal differentiation configuration can best be determined by counting the number of major divisions or departments. Hall, Johnson and Haas (Azumi and Hage, 1972:169) and Hall (1975:145) defined vertical differentiation configuration as the "Number of levels in the deepest single division and the mean number of hierarchial levels for the organization as a whole." Spatial dispersion is the dispersion of activities and personnel in space according to either horizontal or vertical functions by the separation of power centers or tasks. Hall, Haas and Johnson (Price 1972:72) measured spatial dispersion by considering the dispersion of physical facilities, the location of physical facilities, the degree of dispersion of personnel and the location of personnel while Raphael (Hall, 1972:147) used the number of spatially separated places. This study developed a methodology for counting the configuration of each determinant.

The configuration and hence definitions varied for the central office and school for as Hall (1972:141) observed, "...the individual parts (schools) of an organization (school system) can vary in their degree of complexity." Hence two sets of definitions were developed:

Horizontal differentiation of a school was defined as the number of individual or separate divisions or departments that function as distinct units in a school including those central office units that interrelate with the school in any way.

Vertical differentiation of a school was defined as the number of position levels that the principal administers in his/her school, including the principal's position, as well as the position levels in the school system's central office that interrelate with or are associated in any way with the school, as per organizational chart.

Spatial dispersion of a school was defined as the total number of individually administered schools in the school system, including the principal's own school, the central office and other separate sites that interrelate with, or are associated with the school in any way in the performance of the duties of the principal.

Horizontal differentiation of a school system was defined as the number of individual or separate departments or divisions that function as distinct units in the school system's central office including the school with the largest number of such units.

Vertical differentiation of a school system was defined as the number of position levels that exist in the central office, as per organizational chart, as well as the number of position levels of the school in the system with the largest number of position levels.

**Spatial dispersion of a school system** was defined as the total number of individually administered schools in the school system, the central office and other separately administered sites.

The three elements of complexity, according to Hall (1972:147), often vary independently of one another as well as vary together. An organization can be complex in terms of one of the elements and much less complex in terms of the other two elements; any combination of minimum to high complexity on all three elements is possible.

To aggregate the three complexity elements assumes that each determinant carries an equal weight. In order to overcome the priority problem, a method was devised for determining a scale value for each determinant through the "Law of Comparative Judgement." The methodology used in gathering the data is summarized below while the framework and methodology for deriving the numeric composite measure of complexity is explained in Chapter Five:

(a) An operational definition provided for each complexity item: (questionnaire items, 9, 10, and 11).

(b) Individual complexity configuration items differed in definition for principals (school-based) and superintendents and secretary-treasurers (jurisdiction-based).

(c) To enhance consistency and accuracy of responses, a detailed calculation box was designed for assisting respondents to arrive at horizontal and vertical differential counts (items 9 and 11).

(d) Thurstone's Force Pair Comparison technique (Torgerson, 1965:155-204), which is based on the Law of Comparative Judgement (Thurstone, 1959:39-49), was selected for gathering data that would provide a scaled priority weighting or numeric value for each complexity determinant.

Perceived Level of Complexity. Another way to ascertain the degree of complexity is to simply ask the respondents to indicate how complex they feel their organization is. Scott and Wertheimer (1962:104) suggest that:

> ... it is reasonably safe to assume that, for all subjects who understand the English language, the category 'very favorable' represents a more positive attitude toward an object than the category 'favorable' and that 'favorable' represents a more positive attitude than 'neutral'; and so on for the responses 'unfavorable' and 'very unfavorable'.

Consequently, Section two of the questionnaire asked respondents to indicate their personal perception regarding the complexity of their particular organization on a standard 5-point Likert-type perception scale.

Leadership Style. Leadership, which Burns (1978:47) suggested is, "... the most observed and least understood phenomenon," can best be defined as, "... the process of influencing the activities of an individual or a group in efforts toward goal achievement in a given situation" (Hersey and Blanchard, 1969:60). Leadership style was defined in this study as a bipolar construct referring to an underlying need structure of the individual which motivates the leader's behavior in various leadership situations (Fiedler, 1967:36).

A leader can engage in a variety of behaviors to attain the same goal. However, the underlying need structure or motivational system that drives the leader to behave in a certain way is constant. It is this motivational system of underlying need structure of a leader, "... that expresses itself in various goal-seeking behaviors that the individual perceives as rewarding or perhaps even as necessary for his emotional well being" (Fiedler and Chemers, 1974:373).

The two most common motivational patterns that the literature identified were relationship-orientation and task-oriented or initiating structure (Fiedler, 1967:45; Hersey and Blanchard, 1969:65; Fiedler and Chemers, 1974(1):73; Fiedler and Chemers, 1974(2):76). A third motivational pattern has recently been identified. Very little is known about this middle group, which Fiedler has tentatively labelled as the "socioindependent" group(Fiedler, 1978:61). This study was concerned with these three leadership styles.

The instrument that has withstood the test of time in measuring leadership style is Fiedler's LPC (Least Preferred Co-Worker) instrument (Fiedler, 1967:36-46). The LPC is an "... index of a motivational hierarchy, or of behavioral preference, implying that some goals are more important to the individual than others" (Fiedler and Chemers, 1974(1):74 and 1974(2):374). The LPC focuses on motivational structure of leadership:

> The leader's motivational structure is measured by means of a simple bipolar adjective scale which asks the individual to think of all the persons whom he or she has ever known and then to describe the one person with whom it has been most difficult to work-the least preferred co-worker (Fiedler, 1978:60-61).

A high LPC score is reflective of a relationship-oriented motivational pattern, a middle score is indicative of a socioindependent leadership style, while a low score is reflective of a task-oriented style.

The leader who completes the LPC in pejorative, very rejecting and negative terms is considered task-motivated (Fiedler, 1978:61). A leader whose underlying motivational basis is task-related considers his major goal to be the accomplishment of a task or assignment (Fiedler and Chemers, 1974(2):374).

The individual who completes the LPC in relatively more positive terms is a relationship-motivated leader (Fiedler, 1978:61). The relationship-oriented leader (high LPC score) has, "as his primary goal, the establishment and maintenance of close interpersonal relationships" (Fiedler and Chemers 1974(2):374). This type of leader engages in behavior that is based upon friendship, mutual trust, respect and warmth in the relationship between the leader and staff members.

The third group, which clusters around the population mean, is different from the other two groups in many respects: "These individuals tend to be socially independent, less concerned about individuals and less eager to conform to the expectations of others or to take the leadership role" (Fiedler, 1978:61). The socioindependent group have either a 'mixed' motivational pattern or else a distinctly different leadership approach. As well individuals in this group appear to be cognitively more complex and less authoritarian or acquiescent".

Although the LPC has withstood some 30 years of research, it has generally been regarded as one of the weakest parts of the Contingency Leadership model. In terms of internal consistency, Fiedler (1978:89) claims this has never been in question. Martin, Isherwood and Lavery (1976:93) suggest the split-half correlations of the LPC, which ranges from .85 to .95 is an acceptable level of reliability. The new 18-item scale LPC has a somewhat higher internal reliability than the 16 item LPC; however, this study was conducted prior to the development of the 18 scale test.

The stability or retest reliability is a more critical problem. This is an important consideration for the stability score determines whether the LPC can predict leadership and whether it measures a stable or transitory personality attribute. If the LPC did not measure a stable personality attribute, then it could not be a predictor of leadership. One of the most comprehensive investigations into the stability issue was done by Rice who reviewed 23 retest correlations, "The retest reliabilities in these studies ranged from .01 to .91 with a median of .67 and a mean of .64 (SD=.36)" (Fiedler, 1978:89). The .67 LPC medium compares favorably to .60 for the MMPI (Minnesota Multiphasic Inventory), .50 for the Hartshorne and May honesty scales and .65 (males) and .68 (females) for the California Psychological Inventory. Therefore, Fiedler (1978:90) concluded that, "... the stability of LPC clearly falls within the acceptable range for established personality attribute measures."

The methodology for determining the high, middle and low LPC scoring respondents was handled in the manner described by Fiedler (1967:43). Fiedler used the lower third of the study population distribution to identify the low LPC group (task-oriented) and the upper third to identify the high LPC score (relationship-oriented). The middle third of the population was used to identify the socioindependent group.

## STATISTICAL TREATMENT OF THE DATA

This study used both descriptive and inferential statistical techniques. Descriptive statistics is the phase of statistics which attempts only to present, describe and analyze information about a given group without drawing any conclusions or inferences about a large group (Spiegel, 1961:1). Inferential statistics attempts to generalize descriptive data by making inferences or deriving conclusions about the properties or parameters of the population from which the sample was drawn (Runyon and Haber, 1967:2) (Wiersma, 1969:46) (Ferguson, 1959:9) and (Siegel, 1961:1).

The specific meaning or use of a statistic, according to Wiersma (1969:64), "... can usually be recognized by the context of its usage." This study required two distinct phases of data statistical treatment; descriptive statistics being the first phase and inferential statistics the second. The first phase dealt with the preparation and conversion of the raw questionnaire data into usable form while the second phase used inferential statistics to determine attitude and strength of attitude scores.

The study was concerned with three independent variables; administrative position, leadership style and organizational complexity. Questionnaire item number one provided the data for determining administrative position.

The LPC instrument was used to ascertain the leadership style of respondents. A high LPC score indicated a relationship-oriented leadership style, a middle range score indicated a socioindependent leadership style while a low set of LPC scores indicated a task-oriented administrative leadership style. This study adopted Fiedler's (1974:75) classical 16 item LPC test; in order to prevent respondents from forming position preferences, 8 of 16 bi-polar attitude pairs were reflexive. Those respondents with an LPC score of 10 to 65 were categorized as task-oriented, respondents with an LPC score of 66 to 77 were classified as socioindependent, while respondents with an LPC score between 78 to 128 were categorized as relationship-oriented.

The organizational complexity independent variable was measured using two different techniques: one approach used self-perception while the second method, which resulted in a composite complexity score, was based upon the Law of Comparative Judgement and involved a numeric calculation of organizational configuration. Questionnaire items 9, 10, and 11 (Section one) provided the data to determine the numeric configuration. Part A of Questionnaire Section two provided the information necessary to derive a weighted value for each of the three complexity determinants. Thurstone's Force-Pair Comparison technique was used to convert the respondents' responses into a weighted value for each of the three complexity determinants. The DERS Scaling 01 program was used to transform the force-pair comparison data into three scale values using a rational zero-point approach. Further, the three weighted values were then transformed into standardized T-scores so that weighted values would all be positive and more readily understandable. The three configuration counts were multiplied by the transformed T-scores, and in turn, these three scores were then summed to provide a final aggregate composite complexity score. The final step in preparing this data for analytical purposes involved the sorting of respondents into approximately three equal groups. The respondents who scored in the 0.273 to 0.901 range were categorized as functioning in an organization of low complexity, those who scored in the 0.903 to 1.364 range were classified as functioning in an organization of medium complexity and those who scored in the 1.378 to 3.066 range were considered as functioning in a high complexity educational organization.

The second approach used a self-perception method for ascertaining complexity. Respondents were asked to indicate (Part B of Section Two of the questionnaire) how they perceived the complexity level of their organization by using a 5-point Likert-type scale. To meet the conditions of the factorial research design, the five groupings were converted into three groups. The "scarcely complex" and "somewhat complex" groups were combined into the low complexity group while the "very" and extremely complex" groups were combined to form the "high" complexity group.

The final element of data preparation and conversion dealt with the dependent variable. The attitudes and strength of attitudes of respondents toward HRA was measured by using the SD technique whereby the evaluative factor scores represented attitudes and the potency factor scores represented the strength of the attitudes. The questionnaire used 14 bi-polar adjective pairs (10 evaluative and four potency) and 9 HRA concepts to determine the attitudes toward HRA. However, factor analysis of the data revealed that test item nine (Deep-Shallow) cross-loaded very heavily in the opposite direction (factor scores of 0.513 and 0.36 for the evaluative and potency dimensions, respectively) and hence it was excluded from the final analysis.

Concepts three (managerial organization behavior), four (inventory of skills and competencies) and seven (leadership style) combined to provide a measure of attitudes and strength of attitudes toward the HRA causal variables type of information. Concepts two,(motivation level), five (organizational loyalty), six (inventory of attitudes) and nine (organizational behavior of peers and subordinates) combined to provide a measure of attitudes and strength of attitudes toward the HRA intervening variables. Concepts one (satisfaction level) and eight (productivity) combined to provide a measure of attitudes and strength of attitudes toward the HRA end-result type of information.

In order to make the results of the 13 scale items for each of the 9 HRA concepts more manageable and appropriate for describing group responses in semantic space and for conducting analysis of variance tests, the respondents' 13 test item scores were converted to factor scores with a mean of 50 and standard deviation of 10. The factor scores are weighted scores composed of (1) factor loadings on the principal component analysis, (2) inverted correlation matrix, and (3) standardized scores.

Certain statistical treatments had to be applied to the raw scores relative to the 13 bi-polar adjective pair data for each of the 9 HRA concepts prior to the calculation of standardized factor scores. First, numerous series of principal component and image axis factor analyses had to be conducted on both the pilot and final study data in order to validate the pre-chosen Semantic Differential evaluative and potency dimensions, to select the appropriate concepts and to select the appropriate test items (bi-polar adjective pairs) for each dimension. Although principal component factor analysis is the most common model used, Maguire (1973:30) and Hakstian and Bay (1972:18) stated that the image model is more rigorous and appropriate for exploratory studies. Hence, the image model was used in phase three of the pilot study. In addition, the results of the image model were matched against the results of the principal component model. Since the results from the two models were similar and since the test items and concepts were validated, it was decided to use the principal component model for the final study.

The DERS (Division of Educational Research Services) Fact 18 program was used to conduct the principal component and image factor analyses. Phase three of the pilot study used a series of factor solutions to determine the appropriate number of factors and transformation solutions (matrices of 2, 3, 4 and 5, varimax rotation, oblique and orthogonal procrustes). The two factor varimax rotation using Eigen values of about unity or more in the diagonal was the appropriate factor solution.

In order to be able to select scales and determine the validity of the evaluative and potency dimensions, certain decision rules had to be applied to the results. It was decided that factors having an Eigen value greater than unity would be considered appropriate for inclusion. In terms of scale selection, two decision rules were applied: (1) a factor loading of 0.35 or more and (2) a cross-loading difference of more than 0.10. The DERS Fact 07 program was used to match the results of the principal component factor analysis model with the results of the image model.

The second phase of data treatment dealt with the statistical analysis of the prepared and converted data. The most appropriate inferential statistic that could be used to determine if there were any significant differences in the attitudes and strength of attitudes was the analysis of variance test. Parametric tests were chosen, for as Warr and Knapper (1968:63) aver, they tend to be more powerful and provide greater use of data than nonparametric tests. The data met the three conditions for parametric tests: (1) variances need to be fairly similar, (2) scales need to have equal intervals, and (3) response distributions should be normal. The one-way analysis of variance tests were chosen for as Runyon and Huber (1971:216) state, it "... is a technique of statistical analysis which permits us to overcome the ambiguity involved in assessing significant differences when more than one comparison is made". The literature identified four assumptions that had to be met in order for the ANOVA results to be valid: (1) scores must be interval or ratio in nature, (2) scores must be measures of random samples from the study population, i.e., the responses are independent of all other responses, (3) population must be normally distributed and (4) homogeneity of variance.

The DERS ANOVA 15 analysis of variance package was applied to the study data. Inferential statistics involve the possibility of sampling error entering into the results. Sampling errors are a consequence of the characteristics of one sample not being identical to the due characteristics of the population. In applying the ANOVA results to this study, the significance level of the F-test was set at the 0.05 level of probability or less. However, to accept the F-test results, all four assumptions had to be met. The first three conditions were always met while the homogeneity assumption was not always met.

The homogeneity of variance condition was considered not met when the ANOVA test results showed the Chi-square homogeniety of variance was 0.05 or less. However, if the group sizes were approximately equal, then the homogeneity of variance assumption was considered met. Since Guenther (1964:58) stated that the analysis of variance tests are robust and ultra-conservative and since the F-test is affected very little if homogeneity of variance is not obtained, the F-test significance level was lowered from 0.05 to 0.03 when homogeneity was not met. If the homogeneity of variance was not met at the 0.05 level, then this was noted in the analysis and caution expressed with regard to interpreting the significant differences at the 0.03 level.

Two methods of interpreting the F-test are available; the planned or a priori comparison and post hoc or a posteriori comparisons. Since the study was exploratory, there was no way to predict which group means would likely be different, hence the Scheffé multiple comparison of means post hoc comparisons approach was used. Although Lindman (1974:75) claims that the significance level of the S method (Scheffé) should be set at a generous level for exploratory studies, this study nevertheless used the rigorous 0.05 or less probability level for accepting significance of differences between group means. The same 0.05 rule was set for the Scheffé test as for the F-test if homogeneity of variance did not exist.

## SUMMARY

Chapter Three addressed the issue of research design, methodology and statistical treatment of the data. Section One described the 3x3x3 factorial research design which was chosen because of the economy offered by this single design. The study sample included all principals, superintendents and secretary-treasurers in Alberta schools in the fall of 1976, excluding those in the Edmonton and Calgary public and separate school jurisdictions. Section Three discussed the research procedures used with particular attention being given to the theoretical underpinnings and the methodology and instrumentation used in collecting information on the independent variables. The LPC instrument was used to measure leadership style while the semantic differential technique was used to collect data with respect to direction and strength of attitudes. Organizational complexity was measured in two ways: perceptions of respondents and numerically derived through the Law of Comparative Judgement and the Force Pair Comparison technique. Section four showed how the data were analyzed by using the one-way analysis of variance (ANOVA) test with Scheffé's test for multiple comparison of means.

# CHAPTER IV

# INSTRUMENTATION DEVELOPMENT AND PILOT TESTING

The purpose of this chapter is to provide the underlying rationale of the SD and instrumentation design, pilot testing of the SD, and reliability and validity of the SD. The first section describes the SD concept and dimensionality while the second section deals with the selection of appropriate scales and concepts. The third section describes the three-phase pilot study, including the validation of the final concepts and scales. The fourth section deals with factor matching while the fifth section identifies and describes various SD reliability and validity tests.

## SEMANTIC DIFFERENTIAL CONCEPT AND DIMENSIONALITY

### Instrumentation General

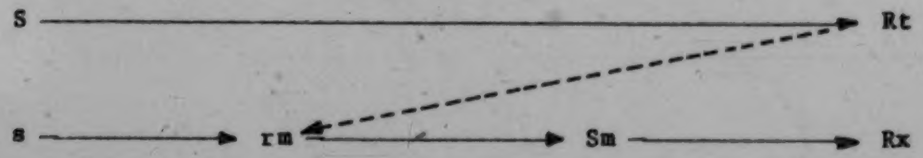
The semantic differential, suggest Warr and Knapper (1968:55-56), Osgood, Suci and Tannenbaum (1958:76) and Kerlinger (1964:565), is a highly generalized technique or method, not specific instrument, which has a general way of getting at information required for a research problem. As well, Van Dalen (1979:150) reported that the SD is"... a simple, useful and versatile tool for gathering data."

### Semantic Differential Concept

The SD technique is based upon what Osgood, Suci and Tannenbaum (1958:9) call the psychological meaning of 'meaning'. The first aspect of the SD concept, is semantic meaning, i.e., the relation of signs to their significates. The second aspect relates to meaning as a representational mediation process. According to Osgood, Suci and Tannenbaum (1958:318-19), the meaning of a sign as a representational mediation process is:

> ...representation by virtue of compressing some portion of the total behavior elicited by the significate and mediating because this process, as a kind of self-stimulation, serves to elicit overt behaviors, linguistic and non-linguistic, that are appropriate to the things signified. In semantic decoding, stimulus patterns (signs as stimuli) selectively elicit representational processes as reactions; in semantic encoding, vocal, orthographic, gestural and other response patterns (signs as responses) are selectively elicited by representational processes as stimuli. Thus we have a two-stage, mediational mechanism.

Figure 4.1 illustrates that two stage S-R paradigm:



Where: S - significate
Rt - behavior produced by the significate S
s - sign of the significate rather than a sign of any of a magnitude of other things
rm - representational mediators (interpretation)
Sm - mediated self-stimulation
Rx - variety of instrumental acts which take account of the significate

Figure 4.1 Symbolic Account of the Development of a Sign

Figure 4.1 can best be illustrated by applying the process to the study questionnaire. HRA, to all or most of the study repondents, had no meaning because the respondents likely had no previous exposure to the concept. To measure the attitude and strength of attitude toward HRA, this study established nine concepts that served as "signs" (represented by s ). Each of these nine concepts have no meaning on their own but rather take on meaning from some real object or thing called a significate (represented by S). Repondents were asked to express their feelings (Rx) about "a measure of the satisfaction level for each of your staff members" ( s ) on 14 bipolar adjective pairs; each respondent was asked to react to or indicate how he/she felt about "measuring satifaction level." But "measuring satisfaction level" has no meaning on its own!

The representational mediation process of meaning suggests that the "measuring of satisfaction level" sign ( s ) reminds the respondent of some specific thing or significate ( S ). The respondent is predisposed to respond to the significate in a predictable pattern of behaviors (Rt); with the sign ( s ) through a representational mediation process (rm). If the "measurement of satisfaction level"was associated by the respondent with "the right thing to do", then he/she would be predisposed to elicit reponses similar to responses when reacting to the "right thing to do." The third aspect of the SD concept deals with the question of how these "response dispositions" are related to measuring meaning or attitude through the SD.

The operationalization of measurement of these disposition responses through the SD is accomplished, argue Osgood, Suci and Tannenbaum (1958:319) by assuming, "...that the representational mediation process is a complex affair, a compound reaction made up of some bipolar reaction components." As a result, Osgood, Suci and Tannenbaum (1958:26) define SD as the "...successive allocation of a concept to a point in the multidimensional space by selection from among a set of given scaled semantic alternatives." Hence the meaning of a sign or stimulus is a function of the axis coordinates in semantic space while the difference in attitude between and among different people is a function of the differences in their respective coordinates within the same space.

Meaning of a point in semantic space is derived from two essential properties of the point. These are the quality of meaning (direction from the origin) and intensity of meaning (distance from the origin). The direction or quality of meaning is derived from the alternative polar term selected while the intensity or distance is derived from the extremeness of the scale positions checked.

In summary, the SD concept is built upon (1) the relation of signs to their significates, (2) meaning as a representational mediation process and (3) location in semantic space as determined by the direction and distance from the origin. While Osgood, Suci and Tannenbaum (1958:76) have developed the SD for the measurement of meaning, they go on to say that the SD is a highly generalizable technique of measurement for getting at certain types of information and as such suggest the measurement of attitude.

## Dimensionality and Meaning of Semantic Space

The reaction dispositions of respondents to a sign in terms of direction and intensity is assumed to correspond to a point in multidimensional semantic space. The SD scale represents a straight line function that passes through the origin of Euclidian space and a number of these scales represent multidimensional space.

There are three main SD dimensions: evaluative, potency and activity factors. These three factors often account for around 70 percent of the common variance. The pervasive evaluative factor accounts for approximately forty percent of the common variance while potency accounts for about twenty percent. The activity factor accounts for ten to fifteen percent. Lesser dimensions are stability and receptivity.

Kerlinger (1964:569) and Van Dalen (1979:149) indicate investigators may choose among Osgood's dimensions or even add dimensions of their own. This study used two of the original dimensions - the evaluative and potency factors - although attempts were made to ascertain if more dimensions existed. Writers have tended to give examples rather than developing operational definitions for each dimension. Examples, claims Ennis (1973:651 and 652), are useful in clarifying terms because they connect the term to the concrete world but in providing an example the researcher does not necessarily specify the intended manipulation or operation of the research. To overcome this major problem, this study developed an operational definition for each dimension. For purposes of this study, the evaluative dimension was defined as the cognitive belief or feeling aspect of attitude that indicates the cognitive or belief feeling of a person in terms of approach-avoidance response dispositions toward the referent concept or sign. This definition coincides with what Travers (1978:184) has defined as the cognitive component of an attitude. The cognitive component refers to the knowledge or information a person has about a concept that results in a favorable/unfavorable belief by that person about the concept. This belief is felt and expressed in terms of either a favorable or unfavorable dispostion or feeling toward the referent and is measured by the SD evaluative dimension scales.

The potency dimension, according to Kerlinger (1964:565), is interpreted as "strength". Travers (1978:324) indicated the potency dimension is reflected by scales such as hard-soft and severe-lenient. Osgood, Suci and Tannenbaum (1958:72-3) state that potency "... is concerned with power and the things associated with it." The potency dimension was defined as the affect or feeling aspect of attitude that indicates the strength of the approach-avoidance response disposition. This definition coincides closely with what Travers (1978:185) has called the affect or feeling part of an attitude. Figure 4.2 compares these aspects of attitude to the SD dimensions and dependent variable measures.

| Aspects of Attitude and Equivalent SD Dimensions | Synthesized Operational Definitions | Dependent HRA Variable Measures |
|---|---|---|
| Cognitive/ Belief (Evaluative) | . based upon knowledge about sign<br>. indicates the cognitive or belief feeling of a person<br>. result is an approach-avoidance response disposition of favorable-unfavorable feeling toward concept assign | . attitude toward HRA or HRA causal, intervening or end-result variables |
| Affect/ Feeling (Potency) | . based upon the affect or feeling aspect of attitude.<br>. indicates intensity, strength, potency or conviction of the affect feeling<br>. result is an approach-avoidance response disposition in terms of negative-positive feeling toward a concept or sign | . strength of attitude toward HRA or HRA causal, intervening, or end-result variables |
| Action (Activity) | N/A | N/A |

Figure 4.2 Comparison of the Aspects of Attitude to the SD Dimensions and Dependent Variable Measures.

This combination is a powerful approach to attitude measurement and behavior prediction because an individual could be favorably disposed toward a concept, yet in a real life situation he might not behave accordingly since the strength or commitment or the feeling could be insignificant or trivial (semantic space is weak in potency).

Osgood, Suci and Tannenbaum (1958:89) state that the meaning of a concept can be usefully defined "... as that point in the semantic space identified by its coordinates on several factors." Using Euclidian geometry, Kerlinger (1964:566) provides a simple diagram to demonstrate the evaluative and potency dimensions in semantic space. Figure 4.3, provides a similiar illustration specifically in terms of this study (a scale score of seven converts to +3 and a score of 1 to -3 on a seven point SD scale):

| Hypothetical Respondent | Evaluative | Potency |
|---|---|---|
| A | +3 | +1 |
| B | +1 | +1 |
| C | -1 | -1 |
| D | +3 | +3 |
| E | -3 | +3 |

By reviewing Figure 4.3 it can be said that person A has a very positive attitude (+3) toward HRA but that his feeling (+1) is not very strong. Person B has a slightly positive belief (+1) and not a strong conviction (+1). Person C has a slightly negative belief (-1) and a minimally weak (-1) conviction. Person D has an extremely positive (+3) attitude and an intensely strong (+3) conviction about HRA while person E has a very negative cognitive belief (-3) and very strong conviction (+3). It is possible to draw some inferences from these five examples in terms of predicting behavior. There would likely be five different behavior reactions if HRA was to be implemented. Person A would likely support the concept but would likely not take any active support role. Persons B and C would likely not actively work for nor against the implementation. Person D, on the other hand, would not only be

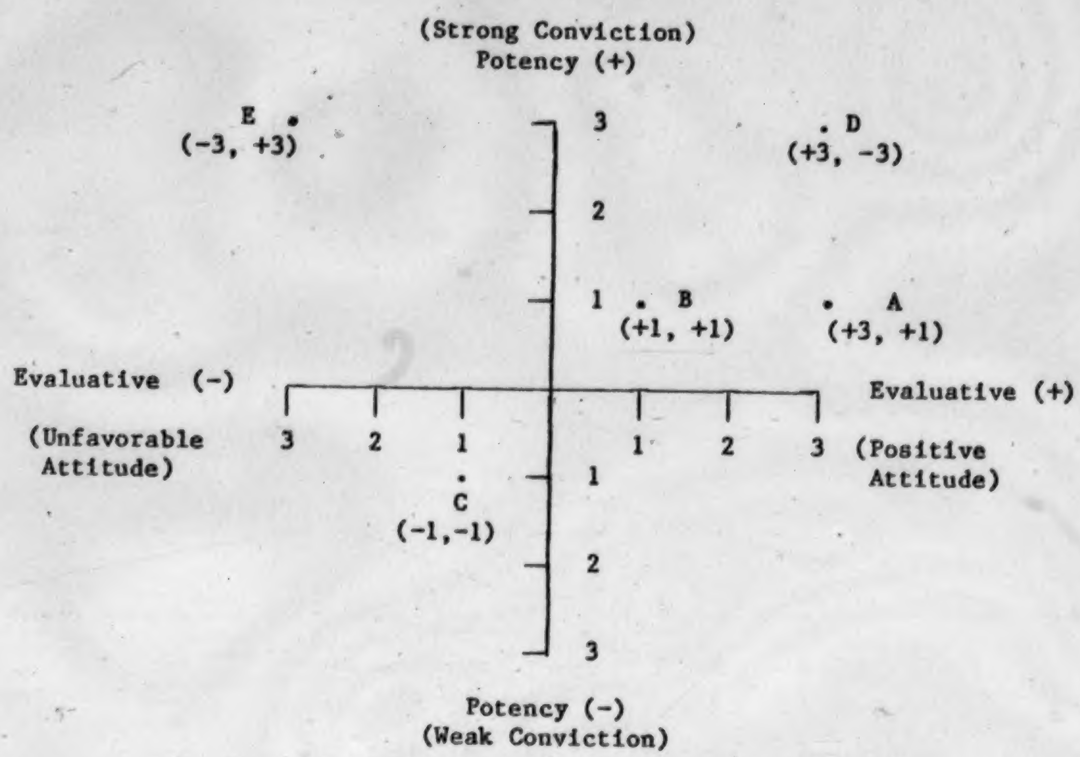

(Strong Conviction)
Potency (+)
E
(-3, +3)
D
(+3, -3)
3
2
1
B
(+1, +1)
A
(+3, +1)
Evaluative (-)
Evaluative (+)
(Unfavorable Attitude)
3
2
1
1
2
3
(Positive Attitude)
1
C
(-1,-1)
2
3
Potency (-)
(Weak Conviction)

Figure 4.3 Hypothetical Semantic Space Plotting of Cognitive Attitude and Strength of Attitude Toward HRA by 5 Respondents.

supportive but would likely get heavily involved in implementation and provide leadership while person E would likely actively work against the implementation.

## CONCEPT AND SCALE SELECTION

Selection and validation of the concepts and scales constituted the major emphasis of the pilot studies.

### Selection of Semantic Differential Concepts

A concept could be a written word, phrase or description or it could be verbal or pictorial. Warr and Knapper (1968:56) add that concept is taken to cover all possible objects of judgement. Osgood, Suci and Tannenbaum (1958:77) conclude that it is the nature of the research problem that determines the class and form of concept to be selected.

Criteria. Maguire (1973:298), Kerlinger (1964:576-68) and Osgood, et. al. (1958:77-78) identified four general criteria for selecting concepts. First, it was felt the concepts chosen for this study should be familiar to the subjects. Second, it was felt the chosen concepts would evoke a variety of responses between and among the subjects. Third, Maguire (1973:298) suggested that, "Sometimes it is possible to develop a blueprint of the domain similar to ones used in test construction. Each cell in the framework can then be sampled in order to provide adequate coverage of the area." Figure 4.4 illustrates the "Maguire-type blueprint" which maps out the semantic space of the HRA conceptual area. Fourth, the final phase of the pilot demonstrated

| Cell One | Cell Two | Cell Three |
|---|---|---|
| Causal Variables | Intervening Variables | End-Result Variables |
| (Y)(3) .Managerial Behaviour<br>.Organizational Structures<br>(XY)(4).Level of Individual Skills and Competencies<br>(XY)(7).Leadership Style | (XY)(9).Subordinate Peer Behaviour<br>(X) .Perception<br>(XY)(2).Motivation<br>.Decision Making<br>(XY)(6).Attitudes<br>.Communication<br>.Control<br>.Coordination<br>(XY)(5).Loyalty | (XY)(8).Productivity<br>(XY)(1).Satisfaction |

Notes: 1. Elements chosen from each variable (cell) for questionnaire in phase three of the pilot study indicated by an (X).

2. Elements chosen from each variable (cell) for final questionnaire concepts indicated by a (Y).

Figure 4.4 Blueprint of HRA Domain Showing the Conceptual Areas Covered by "Concepts" in the Questionnaire.

the questionnaire was too lengthy. Hence, for practical reasons, the 14 concepts in the pilot-proper were reduced to 9 HRA concepts and one control concept for the study.

Contextual contamination. Osgood, Suci and Tannenbaum (1957:85-85) suggest the ordering of concepts has no effect upon the response of the subjects. As a result, Warr and Knapper (1968:114) concluded the validity of the SD is not influenced by unwanted context effects.

Literary format of "triggering" concepts. One of the criteria of an acceptable concept is that it be familiar to the subject. Because of the type of "triggers" used in this study, the necessity to state the "concept" in a way that the subject understands what he is to respond to, was difficult. From the factor analysis conducted during phase three of the pilot study, it was concluded that since the concepts all evoke a variety of responses, the "triggering" concepts were stated in a way that the respondents understood them.

## Selection of Scales — Construct Validity

Criteria. There is no item-specific nor standard set of bi-polar adjective pairs to use as scales. The selection of scales, according to Maguire (1973:298) and Osgood (1958:78), is more structured than the selection of concepts. Maguire (1973:297), Kerlinger (1964:569-570) and Osgood, Suci and Tannenbaum (1958:78-80) collectively identified five criteria for selecting scales.

First, Warr and Knapper (1968:115) contend that an embarrassing theoretical uncertainty makes it impossible to know when selected concepts have covered the total domain of a conceptual area. However, the application of Maguire's (1973:298) "domain blueprinting" helped meet this criterion. Second, a scale was considered to be concept relevant when "... systematic variance can be identified with an adjective pair" (Kerlinger, 1964:570). The chosen scales (criterion three) were all polar opposites and were assumed to be familiar to the population (criterion four). Factor representativeness, which is criterion five, is demonstrated later by the high factor loadings.

Number of scales. Osgood, Suci and Tannenbaum (1958:78) suggest that each factor have at least three scales that load highly on that factor and minimally on others. They further suggested that ideally only one scale should be required for each concept. Various studies revealed a broad range of possibilities. For example, Friedman and Gladden (Snider and Osgood, 1969:486) used nineteen evaluative, three potency and three activity scales while Williams (Snider and Osgood, 1969:475) used six evaluative, three potency and three activity scales. This study utilized four potency and ten evaluative scales.

Divided versus undivided scales. Warr and Knapper (1968:111) conducted an experiment which concluded that, "There is no doubt that the undivided scales generate the same pattern of response as do the customary scales." Divided units were used in this study for ease of key punching data cards directly from the questionnaire.

Number of scale units. Osgood, Suci and Tannenbaum (1958:85) recommend the use of seven scale units because all of them tend to be used with about equal frequencies. Since Osgood, et al. (1958:85) indicated that respondents felt irritated when using only five scales or more than seven units, this study used seven scale units.

Polarity direction. Osgood, Suci and Tannenbaum (1958:82) suggested that the polarity direction of scales should be altered to prevent formation of position preferences. In stage one of the pilot study, 13 of 26 scales were reflexive while eight out of 14 scales were reflexive in the final study.

Speed of responding. Normally instructions allow about five seconds per scale response. Warr and Knapper (1968:59) declared that the responses of rapidly responding subjects were more stable than slow responding subjects. Hence, respondents were asked to allow about five seconds per response.

Scale order. Warr and Knapper (1968:85-86) demonstrated that the order of scales did not affect the between-forms reliability of the SD. Hence, this study did not alter the ordering of scales.

## PILOT STUDY-VALIDATION

A three-phase pilot study was conducted. The first phase dealt with general questionnaire design, instructions and concept/scale identification. Phase two focused on concept/scale selection based upon the experience of phase one. Phase three utilized statistically rigorous analytical procedures to select the final set of concepts and scales (see Appendices H, I and J for questionnaires used).

### Stage One

Twenty four scales were selected from Osgood's established list for the initial instrument. Three concepts and twenty four scales were chosen. Respondents were also asked to respond generally to seven other concepts. As well, each respondent was asked to respond to a structured set of questions dealing with instructions, concept/scale acceptability and face validity (Appendix H). Thirty practicing administrators responded.

To be accepted, a scale had to meet at least two out of the three criteria: (1) at least 60 percent of the subjects had to accept the scale, (2) the range of responses on the seven point scale was at least four and (3) the deviation from four was at least + 0.8. Five evaluative and four potency scales were accepted as shown in Table 4.1. Four other scales were added for stage two based upon suggestions made by the respondents. The subjects indicated that the accompanying instructions were relatively clear, but some difficulty was experienced with the triggering concepts.

### Stage Two

Stage two utilized nine evaluative and four potency scales as shown in Table 4.1. As a result of analysis by the thesis committee, sixteen evaluative and five potency scales were selected for the pilot-proper study. In addition, twelve HRA concepts and two control concepts were chosen for the third stage.

### Stage Three—Factor Analysis and Construct Validity

A formal pilot study was required in order to select the most appropriate scales and concepts and to ascertain the ability of the semantic differential scales to measure attitudes and strength of the attitudes toward HRA (construct validity). Kerlinger (1964:453) suggested that factor analysis is one method of construct validation.

Selection of the sample. The sample chosen for the pilot study was University of Alberta Educational Administration summer school students. The writer distributed the questionnaires to all the first and second half classes, either directly to the class or through the instructor. Each instructor was asked to collect the completed

Table 4.1 Selection of Scales for Pilot Stages One and Two

| Stage One* | Stage Two** |
|---|---|
| Evaluative | Evaluative |
| 1. Good--Bad | 1. Good--Bad |
| 2. Beautiful--Ugly | 2. Valuable-Worthless |
| 3. Sweet-Sour | 3. Nice--Awful |
| 4. Valuable--Worthless | 4. Meaningful--Meaningless |
| 5. Nice-Awful | 5. Healthy--Sick |
| 6. Clean--Dirty | 6. Important--Unimportant |
| 7. Tasty-Distasteful | 7. Efficient--Inefficient |
| 8. Kind-Cruel | 8. Timely-Untimely |
| 9. Sweet-Bitter | 9. Relevant-Irrelevant |
| 10. Pleasant--Unpleasant | |
| 11. Happy-Sad | |
| 12. Fragrant--Foul | |
| 13. Fair-Unfair | |
| 14. Healthy-Sick | |
| 15. Timely-Untimely | |
| 16. Voluntary-Compulsory | |
| 17. Optimistic--Pessimistic | |
| Potency | Potency |
| 18. Serious--Humorous | 10. Strong--Weak |
| 19. Large-Small | 11. Deep-Shallow |
| 20. Hard-Soft | 12. Heavy-Light |
| 21. Strong-Weak | 13. Serious--Humorous |
| 22. Deep-Shallow | |
| 23. Heavy--Light | |
| 24. Loud-Soft | |

* Underlined scales were retained for Stage Two (9)

** Underlined scales were added based upon selection of the most appropriate scales suggested by respondents.

questionnaires. Because of a low return, 34 additional questionnaires were distributed to Alberta Education personnel. Table 4.2 shows the questionnaires distributed, returned and used. The demographic characteristics of the phase three pilot study are shown in Appendix D.

**Factor analysis and construct validation theory.** Factor

**Table 4.2 Research Sample for Phase Three of the Pilot Study**

| Sample | Distributed | | Returned | | Unuseable | | Useable | |
|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % |
| Summer School Students | 260 | 100.0 | 98 | 37.7 | 25 | 25.5 | 73 | 74.5 |
| Alberta Education | 34 | 100.0 | 28 | 82.4 | 4* | 14.3 | 24 | 85.7 |
| Total | 294 | 100.0 | 126 | 42.9 | 29 | 23.0 | 97 | 77.0 |

*Submitted too late for key punching.

analysis provides evidence of construct validity and structural theory construction through parsimoniously anwering three questions (Kerlinger, 1964:653): (1) number of factors, constructs, components, clusters or dimensions, (2) items, scales, tests or variables that load or saturate on various factors and (3) the magnitude or intensity of the saturations or loadings.

Image factor analysis - the most powerful method. Most educational researchers, claims Maguire (1973:30), have limited themselves to "Little Jiffy" or principal component factor analysis which, "... is no longer good enough for the purpose of structuring attitude domains." Maguire goes on to say that principal component analysis in a factor analytic solution is unsuited to (1) eliminate inappropriate scales and (2) separate variance from the common attitude space. Hakstian and Bay (1972:18) concluded that only the common-factor and image models are appropriate in exploratory research. Since the common-factor model was not available on DERS Fact 18, the image model was chosen. It was decided that factors having an Eigen value of greater than or about unity (Kaiser-Guttman criteria in Hakstain and Bay, 1973: 17) would be used as a guide to retain and transform the appropriate number of factors.

Image factor analysis results. Table 4.3, which shows the factor loadings of the 21 scales on two factors, revealed many findings important to this study:

1. Construct validity was demonstrated by the fact that two "natural" or "non-forced" factors were identified that accounted for 56.4 percent of the total variance. The communalities ($H^2$) of each item further indicated that the two factors accounted for a great deal of the variance of each scale.
2. The hypothesized high factor loadings were verified for all 21 scales expect variable number 12 which also cross-loaded highly in the opposite direction, 0.548 (E) and 0.544 (P).
3. Nineteen of the 21 scales loaded cleanly while only two cross-loaded quite highly; items 12 and 13 (strong-weak and deep-shallow, respectively.)
4. All the scales had a common factor variance (lowest loading was 0.377 for item 15 which was "serious - humorous") i.e., they were measuring either the attitude or strength of attitude toward HRA.
5. The factor loading scores provided strong guidelines for the selection of scales.

Scale selection criteria. Factor scores provide the criterion for admitting a test item to a factor cluster. Cattell (1952:33), Dubois (1965:466), and White and Hall (1970:340) indicated a factor as low as +0.3 can be admitted. This study used the following decision rules: (1) a factor loading of 0.35 or more to indicate significance of correlation between a scale item and a factor and (2) a cross-loading

Table 4.3 Varimax Rotated Image Factor Analysis Using an Eigen Value of Greater Than .9

| Test Item # | Scale Description | Factor 1 (Evaluation) | Factor 2 (Potency) | $H^2$ |
|---|---|---|---|---|
| 1. | Good-Bad | 0.793 | 0.172 | 0.658 |
| 2. | Valuable - Worthless | 0.815 | 0.188 | 0.700 |
| 3. | Nice - Awful | 0.677 | 0.300 | 0.548 |
| 4. | Meaningful - Meaningless | 0.804 | 0.200 | 0.686 |
| 5. | Healthy - Sick | 0.678 | 0.350 | 0.582 |
| 6. | Important - Unimportant | 0.737 | 0.245 | 0.603 |
| 7. | Efficient - Inefficient | 0.731 | 0.340 | 0.650 |
| 8. | Positive - Negative | 0.837 | 0.257 | 0.767 |
| 9. | Timely - Untimely | 0.677 | 0.368 | 0.594 |
| 10. | Relevant - Irrelevant | 0.741 | 0.305 | 0.642 |
| 11. | Wise - Foolish | 0.775 | 0.328 | 0.708 |
| 12. | Strong - Weak | 0.548 | 0.544 | 0.596 |
| 13. | Deep - Shallow | 0.469 | 0.589 | 0.568 |
| 14. | Heavy - Light | 0.235 | 0.642 | 0.467 |
| 15. | Serious - Humorous | 0.078 | 0.377 | 0.148 |
| 16. | Hard - Soft | 0.165 | 0.600 | 0.388 |
| 17. | Inherent - Extraneous | 0.521 | 0.330 | 0.381 |
| 18. | Realistic - Unrealistic | 0.708 | 0.204 | 0.587 |
| 19. | Tangible - Intangible | 0.461 | 0.317 | 0.313 |
| 20. | Progressive - Regressive | 0.772 | 0.290 | 0.681 |
| 21. | Optimistic - Pessimistic | 0.690 | 0.332 | 0.586 |
|  | Variance | 8.910 | 2.943 |  |
|  | Total Variance | 42.428 | 14.013 |  |
|  | Common Variance | 75.172 | 24.828 |  |
|  | Sum of Communalities |  |  | 11.853 |
|  | Total Variance Accounted For |  |  | 56.441 |

difference of more than 0.10.

Selecting potency scales. Test items 12 to 16 represented the potency factors. Item 12 (strong-weak) was eliminated since it did not meet the criteria. Scales 14, 15, and 16 loaded both cleanly and highly on the potency factor and therefore were selected for use. Test item 13 (deep-shallow) was retained for although it cross-loaded highly it still loaded 0.6 on the potency dimension. Table 4.4 shows the selection of the potency scales.

Table 4.4 Selected and Rejected Potency Scales Arranged in Rank Order (Highest to Lowest) According to Varimax Rotated Image Factor Analysis Factor Loadings.

| Rank Order | Scale Description | Test Item | Potency Loading | Cross-Factor Loading on Evaluative |
|---|---|---|---|---|
| Selected | | | | |
| 1 | Hard-Soft | 16 | 0.60 | 0.39 |
| 2 | Heavy-Light | 14 | 0.64 | 0.24 |
| 3. | Serious-Humorous | 15 | 0.38 | 0.08 |
| 4 | Deep-Shallow | 13 | 0.59 | 0.46 |
| Rejected | | | | |
| 5 | Strong-Weak | 12 | 0.54 | 0.55 |

Selecting evaluative scales. Test items 1 to 11 and 17 to 21 represented the evaluative factors. As indicated by Table 4.5, the lowest factor loading was 0.46 (test item 19) while the highest was 0.84 (test item 8). The 16 evaluative scales met the selection criteria. The first ten rank-ordered scales were accepted for the final instrument, making a study total of 14 scales for 10 concepts.

## FACTOR MATCHING

In order to determine the applicability of the principal component factor analysis for the study proper, factor matching as described by Schonemann (1966: 1-10) and Harman (1968:269-272) was employed. Harman (1968:271) suggests the coefficient of factor similarity should be very high where the number of variables is small. Tucker (Harman, 1968:217), in applying the factor matching model to analyze two studies involving six factors, "...accepts coefficients ranging from 0.999984 down to 0.939811, ...but rejects a value of 0.459717 as definitely low." Table 4.6 shows the relationship between

Table 4.5 **Selected and Rejected Evaluative Scales Arranged in Rank Order According to Varimax Rotated Image Factor Analysis.**

| Rank Order | Scale Description | Scale Source | Test Item # | Evaluative Factor Loading | Cross-Factor Loading, Potency |
|---|---|---|---|---|---|
| Accepted | | | | | |
| 1 | Positive-Negative | (X) | 8 | 0.84 | 0.26 |
| 2 | Valuable-Worthless | (X) | 2 | 0.82 | 0.19 |
| 3 | Wise-Foolish | (Y) | 11 | 0.78 | 0.33 |
| 4 | Good-Bad | (X) | 1 | 0.79 | 0.17 |
| 5 | Meaningful-Meaningless | (Y) | 4 | 0.80 | 0.20 |
| 6 | Progressive-Regressive | (Y) | 20 | 0.77 | 0.29 |
| 7 | Efficient-Inefficient | (X) | 7 | 0.73 | 0.34 |
| 8 | Relevant-Irrelevant | (X) | 10 | 0.74 | 0.31 |
| 9 | Important-Unimportant | (X) | 6 | 0.74 | 0.25 |
| 10 | Realistic-Unrealistic | (Z) | 18 | 0.71 | 0.29 |
| Rejected | | | | | |
| 11 | Optimistic-Pessimistic | (Y) | 21 | 0.69 | 0.33 |
| 12 | Nice-Awful | (X) | 3 | 0.68 | 0.30 |
| 13 | Healthy-Sick | (X) | 5 | 0.68 | 0.35 |
| 14 | Timely-Untimely | (X) | 9 | 0.68 | 0.37 |
| 15 | Inherent-Extraneous | (Y) | 17 | 0.52 | 0.33 |
| 16 | Tangible-Intangible | (Y) | 19 | 0.46 | 0.32 |

Note: 1. (X) used by Osgood in his original 50 scales
(Y) used by Osgood in the Thesaurus Study
(Z) new scale

the degrees of rotation needed to match two sets of factor scores and Tucker's congruence coefficient for matrices A and B. Table 4.7 displays the results of the varimax rotated principal component factor

Table 4.6 **Relationship Between Selected Degrees of Rotation to Match Tucker's Congruence Coefficients for Matrices A and B.**

| Tucker's Coefficient | Degrees Rotation | Tucker's Coefficient | Degrees Rotation |
|---|---|---|---|
| 0.9998 | 1 | 0.9848 | 10 |
| 0.9994 | 2 | 0.9659 | 15 |
| 0.9986 | 3 | 0.9397 | 20 |
| 0.9976 | 4 | 0.8600 | 30 |
| 0.9962 | 5 | 0.7100 | 45 |

Table 4.7 Varimax Rotated Principal Component Factor Analysis of 14 Selected Pilot Scale Items

| Original Test Item | Scale Description | Factor 1 (Evaluative) | Factor 2 (Potency) | $H^2$ |
|---|---|---|---|---|
| 1 | Good-Bad | 0.839 | 0.092 | 0.709 |
| 2 | Valuable-Worthless | 0.861 | 0.140 | 0.761 |
| 4 | Meaningful-Meaningless | 0.853 | 0.149 | 0.749 |
| 6 | Important-Unimportant | 0.796 | 0.209 | 0.677 |
| 7 | Efficient-Inefficient | 0.786 | 0.266 | 0.689 |
| 8 | Positive-Negative | 0.881 | 0.163 | 0.803 |
| 10 | Relevant-Irrelevant | 0.807 | 0.250 | 0.714 |
| 11 | Wise-Foolish | 0.834 | 0.219 | 0.743 |
| 13 | Deep-Shallow | 0.519 | 0.572 | 0.596 |
| 14 | Heavy-Light | 0.253 | 0.798 | 0.700 |
| 15 | Serious-Humorous | 0.040 | 0.683 | 0.469 |
| 16 | Hard-Soft | 0.154 | 0.823 | 0.702 |
| 18 | Realistic-Unrealistic | 0.772 | 0.202 | 0.637 |
| 20 | Progressive-Regressive | 0.825 | 0.819 | 0.716 |
|  | Eigen Values | 8.044 | 1.621 |  |
|  | Variance | 7.180 | 2.486 |  |
|  | Total Variance (%) | 51.284 | 17.754 |  |
|  | Common Variance (%) | 74.283 | 25.717 |  |
|  | Sum of Communalities |  |  | 9.665 |
|  | Total Variance (%) Accounted For |  |  | 69.038 |

analysis while Table 4.8 shows the results of the varimax rotated image axis analysis. Table 4.9 shows the two sets of factors from Tables 4.8 and 4.9 matched along with Tucker's coefficients of congruence. Table 4.10 revealed that the factor congruence coefficients were 0.9985 for factor 1 and 0.9800 for factor 2. This means that factor 1 (evaluative dimension) varied by only three degrees while the potency dimension (factor 2) would need to be rotated only about 3.6 degrees to match perfectly. It was concluded that after the inappropriate scales were eliminated through the image axis model, principal component was equally powerful and hence the principal component model was chosen for use in the final study. To provide additional verification for the two dimensions, factor matching was applied in the final study.

Table 4.8 Varimax Rotated Image Factor Analysis of 14 Selected Pilot Scale Items

| Original Test Item | Scale Description | Factor 1 (Evaluative) | Factor 2 (Potency) | $H^2$ |
|---|---|---|---|---|
| 1 | Good-Bad | 0.783 | 0.181 | 0.647 |
| 2 | Valuable-Worthless | 0.822 | 0.207 | 0.718 |
| 4 | Meaningful-Meaningless | 0.809 | 0.220 | 0.703 |
| 6 | Important-Unimportant | 0.742 | 0.270 | 0.624 |
| 7 | Efficient-Inefficient | 0.742 | 0.327 | 0.630 |
| 8 | Positive-Negative | 0.828 | 0.249 | 0.748 |
| 10 | Relevant-Irrelevant | 0.749 | 0.309 | 0.657 |
| 11 | Wise-Foolish | 0.768 | 0.307 | 0.684 |
| 13 | Deep-Shallow | 0.468 | 0.526 | 0.496 |
| 14 | Heavy-Light | 0.239 | 0.628 | 0.451 |
| 15 | Serious-Humorous | 0.091 | 0.400 | 0.169 |
| 16 | Hard-Soft | 0.168 | 0.594 | 0.381 |
| 18 | Realistic-Unrealistic | 0.701 | 0.280 | 0.570 |
| 20 | Progressive-Regressive | 0.761 | 0.273 | 0.654 |
|  | Eigen Values | 7.406 | 0.725 |  |
|  | Variance | 6.237 | 1.894 |  |
|  | Total Variance (%) | 44.551 | 13.526 |  |
|  | Common Variance (%) | 76.710 | 23.290 |  |
|  | Sum of Communalities |  |  | 8.131 |
|  | Total Variance (%) Accounted For |  |  | 58.077 |

## RELIABILITY AND VALIDITY OF THE SEMANTIC DIFFERENTIAL

The true test of an instrument lies in its ability to pass reliability and validity tests. Kerlinger (1964:429) stated that, "if one does not know the reliability and validity of one's data, little faith can be put in the results obtained and the conclusions drawn from the results." SD reliability and validity are well established.

### Reliability

Consistency or stability of response over time characteristic. This characteristic is usually checked in a test-retest fashion where a product moment correlation ($r_{tt}$) is used. If the stability coefficients

Table 4.9 Principal Component and Image Axis Varimax Rotated Factor Matching of 14 Semantic Differential Scale Items Selected for the Final Study.

| Matrix A (Principal) | | | Matrix B (Image Axis) | |
|---|---|---|---|---|
| Factor 1 (Evaluative) | Factor 2 (Potency) | Original Test Item # | Factor 1 (Evaluative) | Factor 2 (Potency) |
| 0.837 | 0.092 | 1 | 0.783 | 0.181 |
| 0.861 | 0.140 | 2 | 0.822 | 0.207 |
| 0.853 | 0.149 | 4 | 0.809 | 0.220 |
| 0.796 | 0.266 | 6 | 0.742 | 0.270 |
| 0.786 | 0.266 | 7 | 0.724 | 0.327 |
| 0.881 | 0.163 | 8 | 0.828 | 0.249 |
| 0.807 | 0.250 | 10 | 0.749 | 0.309 |
| 0.834 | 0.219 | 11 | 0.768 | 0.307 |
| 0.519 | 0.572 | 13 (P) | 0.468 | 0.526 |
| 0.253 | 0.798 | 14 (P) | 0.239 | 0.628 |
| 0.040 | 0.683 | 15 (P) | 0.091 | 0.400 |
| 0.154 | 0.823 | 16 (P) | 0.168 | 0.594 |
| 0.772 | 0.202 | 18 | 0.701 | 0.280 |
| 0.825 | 0.189 | 20 | 0.761 | 0.273 |

Tucker Coefficients for Matrices A and B, Unrotated
Factor 1 0.9985
Factor 2 0.9800

of two scores are high, then an item or test is said to be consistent. Warr and Knapper (1968:75) indicated that the stability coefficient of the SD in mean responses is usually very high. They cite a study by Jenkins in 1958 which had a stability coefficient of 0.98 and one by Osgood in 1957 which had correlations of 0.85 and 0.91.

Internal consistency characteristic. This refers to the consistency of a subject's response on a single occasion. The simplest procedures for testing this characteristic is the split-half or odd-even correlation technique (Warr and Knapper, 1968:83). Since scales vary for concepts from person to person, the internal consistency depends upon the scales, the subjects and the concepts involved in any one investigation. Warr and Knapper (1968:84) displayed results of two experiments where internal consistency was not high: 0.70 and 0.76 for evaluative, 0.75 and 0.57 for potency and 0.66 and 0.58 for potency.

**Between forms reliability.** Between forms reliability is similar to the preceeding two. The evidence (Warr and Knapper, 1968:85) suggests that between forms reliability is high even when scale polarity is changed or remains the same or when scale order is altered or not altered. Factor analysis in the pilot study confirms this position.

### Validity

**Face validity.** Face validity asks the question "does the instrument appear to be a good one?" Although this cannot be measured quantitatively, the fact that subjects take to the SD readily and the fact that the SD is thought to be a reasonable and attractive instrument, has led Warr and Knapper (1968:89) to conclude that, "...the semantic differential has a high degree of face validity". That position is verified by the experience of this investigator in conducting the pilot study.

**Intrinsic validity.** Although this is not really a form of validity (Warr and Knapper, 1968:89), intrinsic validity is normally defined in terms of, "...the square root of the test-retest reliability of an instrument." Because the test-retest stability coefficient is usually high, the intrinsic validity is therefore usually high.

**Predictive validity.** Predictive validity is defined by Warr and Knapper (1968:90) as, "...the effectiveness with which it predicts a future outcome and is usually measured in terms of the correlation between test score and an external criterion measure." Warr and Knapper (1968:91-92) offer several examples of SD predictive validity. One such study was conducted by Osgood, Suci and Tannenbaum, in which they correctly predicted the eventual voting behavior in 17 out of 18 cases of "undecided" voters. It is interesting to note that only the evaluative and potency dimensions were used. When the activity factor was included the amount of success was reduced. In conducting a post hoc analysis of a SD study conducted by Blumler and McQuail in Britain in 1964, a 92% (22 out of 24), 96% (23 out of 24) and 71% (19 out of 24) success prediction rate for voting Conservative, Liberal and Labor, respectively, was found. Warr and Knapper (1968:92) concluded that, "...some well-constructed devices based upon the technique have been shown to have predictive validity."

Content validity. Kerlinger (1964:445) defined content validity as, "...the representativeness or sampling adequacy of the content--the substance, the matter, the topics, of a measuring instrument". Warr and Knapper, (1968:94) strongly argue against that tenet by saying that it is important for the investigator to know if he has sampled the total domain of an attitude. In this study , the amount of common variance accounted for by the evaluative and potency scales was 56.4 percent. Warr and Knapper (1968:95) concluded that a researcher can never be sure as to whether the total domain of an attitude is tapped. The instrument used for this study has a fair amount of content validity.

Concurrent validity. Concurrent validity is the association between two measures at the same time (Warr and Knapper, 1968:95). High levels of concurrent validity have been found in the evaluative scales when compared with Thurstone and Guttman attitude scales and with the Bogardus social distance scales (Warr and Knapper, 1968:96). They (Warr and Knapper, 1968:96) go on to conclude that, "There is no doubt that responses to evaluative scales provide a valid measure of at least part of an attitudinal complex." Kelly and Levy found a clear positive relationship on the ability of two separate SD profiles to predict the differences in meaning of concepts (Warr and Knapper, 1968:97). Therefore, conclude Warr and Knapper (1968:107) "...concurrent validity is high."

Construct validity. Construct validity, observed Kerlinger (1964:448), "...is one of the most significant advances of modern measurement theory and practice." According to Warr and Knapper (1968:107), construct validity is demonstrated when, the existence of certain hypothetical explanatory constructs is supported by results obtained with it. This characteristic identifies properties, factors or constructs that account for or explain the variance in a test or set of variables. The strength of the SD is that the variance of the things that are being measured have established factors that account for the variance. Kerlinger (1964:453) states that factor analysis is one method for testing construct validity. Hence, it was concluded that the SD is high in construct validity.

## SUMMARY

Chapter four dealt with the development of the SD instrument and the three-stage pilot testing. Section one described the SD concept and dimensionality. The SD evaluative factor, which gives meaning direction represented the cognitive aspect of attitude while the potency factor, which give meaning quality, represented the strength aspect of attitude. Sections two and three revealed that ten HRA concepts and fourteen adjective scales were selected and validated through a three-stage pilot project and by the application of image axis factor analysis. The fourth section factor matched the results of image axis and principal component factor analysis while the fifth section described various SD reliability and validity tests.

# CHAPTER V

# MEASUREMENT AND ANALYSIS OF THE INDEPENDENT VARIABLES

The independent variables in this study are organizational complexity, administrative position and leadership style. The first section describes the methodology and data analysis pertaining to the numerically derived measure of complexity. Section two presents the data associated with perceived levels of complexity. Section three describes and analyzes the data on leadership style while the last section describes the respondents by type of administrative position.

## ORGANIZATIONAL COMPLEXITY: A NUMERICALLY DERIVED COMPOSITE MEASURE

The main method for measuring complexity is through observing its configuration. Vertical differentiation, horizontal differentiation and spatial dispersion are the three major elements of configuration.

### Vertical Differentiation Count

Vertical differentiation is the number of position levels in the authority structure. This includes the depth within the organization and of other organizations within the system that the administrator interrelates with functionally. Table 5.1 illustrates the vertical differentiation count reported by respondents. However, vertical differentiation is not based on the individual counts reported in Table 5.1, but rather on the aggregate between the school and central office as demonstrated in Table 5.2.

Table 5.1 Vertical Differentiation Frequency and Percent Distribution of Respondents by School and Central Office

| # of Position Levels | School | | Central Office | |
|---|---|---|---|---|
| | Frequency # | Percent % | Frequency # | Percent % |
| 1 | 4 | 0.9 | 13 | 3.1 |
| 2 | 36 | 8.5 | 86 | 20.3 |
| 3 | 104 | 24.6 | 132 | 31.2 |
| 4 | 145 | 34.3 | 88 | 20.8 |
| 5 | 90 | 21.3 | 52 | 12.3 |
| 6 | 28 | 6.6 | 19 | 4.5 |
| 7 | 14 | 3.3 | 6 | 1.4 |
| 8 | 2 | 0.5 | 2 | 0.5 |
| Total | 423 | 100.0 | 423 | 100.0 |
| Mean | 4.019 | | 3.447 | |
| Mode | 4.0 | | 3.0 | |

Table 5.2 Aggregrate Vertical Differentiation Count Frequency and Percent Distribution of Respondents

| Aggregate Vertical Differentiation Count | Frequency # | Percent % |
|---|---|---|
| 1 | 1 | 0.2 |
| 2 | 6 | 1.4 |
| 3 | 8 | 1.9 |
| 4 | 21 | 5.0 |
| 5 | 52 | 12.3 |
| 6 | 68 | 16.1 |
| 7 | 92 | 21.7 |
| 8 | 64 | 15.1 |
| 9 | 50 | 11.8 |
| 10 | 27 | 6.4 |
| 11 | 20 | 4.7 |
| 12 | 6 | 1.4 |
| 13 | 4 | 0.9 |
| 14 | 4 | 0.9 |
| Total | 423 | 100.00 |
| Mean | 7.246 | - |
| Mode | 7.0 | - |

**Spatial Dispersion Count**

Spatial dispersion is the overall number of individually administered sites within a school jurisdiction including the central office that the respondent interrelates with in the performance of that person's own job responsibilities. Table 5.3 portrays the spatial dispersion count as derived from questionnaire item number 10.

Table 5.3 Spatial Dispersion Count Frequency and Percent Distribution of Respondents

| Spatial Dispersion Count # | Frequency # | Percent % | Spatial Dispersion Count # | Frequency # | Percent % |
|---|---|---|---|---|---|
| 1 | 53 | 12.5 | 16 | 5 | 1.2 |
| 2 | 38 | 9.0 | 17 | 7 | 1.7 |
| 3 | 29 | 6.9 | 18 | 7 | 1.7 |
| 4 | 14 | 3.3 | 19 | 5 | 1.2 |
| 5 | 15 | 3.5 | 20 | 4 | 0.9 |
| 6 | 24 | 5.7 | 21 | 5 | 1.2 |
| 7 | 37 | 8.7 | 22 | 1 | 0.2 |
| 8 | 35 | 8.3 | 23 | 1 | 0.2 |
| 9 | 24 | 5.7 | 24 | 1 | 0.2 |
| 10 | 25 | 5.9 | 25 | 0 | 0.0 |
| 11 | 15 | 3.5 | 26 | 1 | 0.2 |
| 12 | 21 | 5.0 | 27 | 4 | 0.9 |
| 13 | 15 | 3.5 | 28 | 3 | 0.7 |
| 14 | 14 | 3.3 | 29 | 5 | 1.2 |
| 15 | 6 | 1.4 | 30 | 1 | 0.2 |
| - | - | - | 31 | 3 | 0.7 |
| Total | | | | 423 | 100.00 |
| Mean | | | | 8.502 | - |
| Mode | | | | 1.0 | - |

**Horizontal Differentiation Count**

Horizontal differentiation is the number of individual or separate departments or divisions that function as distinct units of the organization. Table 5.4, which describes the horizontal differentiation configuration count, reveals that almost one-quarter of the respondents

Table 5.4 Horizontal Differentiation Count Frequency and Percent Distribution of Respondents by School and Central Office Settings.

| Horizontal Differentiation Count # | Central Office | | School | |
|---|---|---|---|---|
| | Frequency (#) | Percent (%) | Frequency (#) | Percent (%) |
| 0 | 80 | 18.9 | 99 | 23.4 |
| 1 | 43 | 10.2 | 24 | 5.7 |
| 2 | 47 | 11.1 | 38 | 9.0 |
| 3 | 48 | 11.3 | 45 | 10.6 |
| 4 | 52 | 12.3 | 49 | 11.6 |
| 5 | 55 | 13.0 | 30 | 7.1 |
| 6 | 32 | 7.6 | 25 | 5.9 |
| 7 | 27 | 6.4 | 14 | 3.3 |
| 8 | 15 | 3.5 | 16 | 3.8 |
| 9 | 6 | 1.4 | 10 | 2.4 |
| 10 | 8 | 1.9 | 18 | 4.3 |
| 11 | 5 | 1.2 | 14 | 3.3 |
| 12 | 1 | 0.2 | 12 | 2.8 |
| 13 | 2 | 0.5 | 7 | 1.7 |
| 14 | 0 | 0.0 | 8 | 1.9 |
| 15 | 2 | 0.5 | 7 | 1.7 |
| 16 | 0 | 0.0 | 2 | 0.5 |
| 17 | 0 | 0.0 | 2 | 0.5 |
| 18 | 0 | 0.0 | 0 | 0.0 |
| 19 | 0 | 0.0 | 2 | 0.5 |
| 20 | 0 | 0.0 | 1 | 0.2 |
| Total | 423 | 100.0 | 423 | 100.0 |
| Mean | 4.019 | - | 3.447 | - |
| Mode | 4.0 | - | 3.0 | - |

administer an organization that has no distinct separate curricular, instructional or special divisions. This would be due to the existence of many small school jurisdictions in Alberta. However, an aggregate horizontal differentiation count was needed as shown in Table 5.5.

Table 5.5 reveals that the maximum aggregate horizontal differentiation count was 29, while the minimum was zero. The largest group, 46 respondents or 10.9%, had a count of only one.

Table 5.5 Aggregate Horizontal Differentiation Count Frequency and Percent Distribution of Respondents

| Horizontal Differentiation Count | Frequency # | Percent % | Horizontal Differentiation Count | Frequency # | Percent % |
|---|---|---|---|---|---|
| 0 | 15 | 3.5 | 15 | 7 | 1.7 |
| 1 | 46 | 10.9 | 16 | 5 | 1.2 |
| 2 | 18 | 4.3 | 17 | 12 | 2.8 |
| 3 | 23 | 5.4 | 18 | 7 | 1.7 |
| 4 | 32 | 7.6 | 19 | 9 | 2.1 |
| 5 | 28 | 6.6 | 20 | 4 | 0.9 |
| 6 | 30 | 7.1 | 21 | 5 | 1.2 |
| 7 | 29 | 6.9 | 23 | 2 | 0.5 |
| 8 | 29 | 6.9 | 23 | 2 | 0.5 |
| 9 | 22 | 5.2 | 24 | 3 | 0.7 |
| 10 | 26 | 6.1 | 25 | 3 | 0.7 |
| 11 | 15 | 3.5 | 26 | 0 | 0.0 |
| 12 | 13 | 3.1 | 27 | 3 | 0.7 |
| 13 | 17 | 4.0 | 28 | 0 | 0.0 |
| 14 | 11 | 2.6 | 29 | 1 | 0.2 |
| Total | | | | 423 | 100.0 |
| Mean | | | | 8.364 | - |
| Mode | | | | 1.0 | - |

**Scale Weighting Each Complexity Determinant**

Since it could not be assumed that each determinant contributed equally to complexity, a method for weighting the determinants was required. Thurstone's Force Pair Comparison technique (Torgerson, 1965:155-204), which is based on the Law of Comparative Judgement (Thurstone, 1959:39-49), was used to determine the scale values for each determinant. The law suggests that when an individual judges a given stimulus to be greater than another stimulus through a discriminal process, with respect to a given attribute such as spatial dispersion, then these judgements can be converted to a scale value on a psychological continuum.

Each of the three sets of questionnaire compared-pairs had to be judged by the respondents as to which member of the pair contributed more or was more important in determining organizational complexity. Since the Law of Comparative Judgement locates the given stimuli on the psychological continuum only in relation to the other stimuli, a rational zero point must be chosen for traits such as personality and attitude. In order to make the scaled values more convenient they were transformed to a T-score with a standard deviation of one and a mean of zero. Finally, the T-scores were converted to percentages as shown in Table 5.6 in order to show the proportionate contribution of each complexity determinant.

Table 5.6 Derived Scale Values, T-Scores and Converted Percentages for each Complexity Determinant in the Final Study.

| Stimulus Number | Complexity Determinant | Scale Value | T-Score | Converted Percent |
|---|---|---|---|---|
| 1 | V.D. | 0.921 | 59.21 | 39.48 |
| 2 | S.D. | -1.390 | 36.10 | 24.06 |
| 3 | H.D. | 0.468 | 54.68 | 36.46 |
| Total | | | 149.99 | 100.00 |

Table 5.6 shows that vertical differentiation was the most important determinant by contributing 39.48 percent toward complexity while spatial dispersion was judged to be the least important with a T-score of 36.10 or 24.06 percent.

### Derivation of the Composite Complexity Measure

To arrive at a measure for each complexity determinant, the appropriate standardized T-score value was multiplied by the configuration count of the given determinant. For example, the vertical differentiation count of nine for respondent 001 was multiplied by the

T-score of 59.21 to arrive at a vertical differentiation complexity measure of 532.89. Second, the three individual determinant measures were summed. Finally, the summed scores for each respondent, which were in thousands, were transformed into a measure of unity. Hence the least complex composite score was 0.273 while the most complex score became 3.066. Appendix E provides more detail regarding the derivation of the scale values and the conversion of these values to a composite measure.

### Reliability and Validity of the Composite Complexity Measure

Face validity. The use of the force pair comparison technique to establish weighted values for each determinant and applying those scaled values to an actual configuration count appears to have face validity since only 5.9% or 25 out of 423 respondents failed to complete the force pair comparison section and only 15 or 3.5% of the respondents failed to complete the configuration count.

Internal consistency reliability. One test of reliability in a set of choices test items is the consistency of a subject's response on a single occasion. The force pair comparison approach is permissive rather than coercive with respect to respondent selections and as such does not force transitivity on the data (Torgerson, 1965: 53). The transitivity postulate reasons that if stimulus 1 is greater than stimulus 2, and stimulus 2 is greater than stimulus 3, then stimulus 1 is greater than stimulus 3. With three stimuli, there was a possibility of four triad pairs; two triad pairs (1 and 2) had one possible intransitive triad each, while two triad pairs (triads 3 and 4) automatically met the condition of transitivity. Figure 5.1 lists the transitive and intransitive triad pairs (the numbers in the bracket refer to the determinant stimulus number in the questionnaire):

| Triad Pair | Transitive Triads | Intransitive Triads |
|---|---|---|
| 1 | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(1 - 2 - 1) | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(1 - 2 - 3) |
| 2 | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(2 - 3 - 3) | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(2 - 3 - 1) |
| 3 | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(1 - 3 - 3) | None |
|  | or |  |
|  | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(1 - 3 - 1) | None |
| 4 | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(2 - 2 - 1) | None |
|  | or |  |
|  | V.D. S.D.<br>S.D. H.D.<br>V.D. H.D.<br>(2 - 2 - 3) | None |

Figure 5.1 Listing of Transitive and Intransitive Triad Pairs

A transitivity index of 75 percent or better was set as the minimally acceptable level. Table 5.7, which shows the results of the consistency check, reveals the transitivity postulate met the 75 percent or better standard. The first triad pair had a consistency of 93.4%, the second triad pair 86.7% while the overall transitivity was 97.5%.

Consistency over time reliability. Consistency of responses over time is usually determined in a test - retest fashion. Since the pilot study included an identical test item, a consistency over time check was conducted. In order to overcome the biasing effect (Torgerson, 1965: 168), the stimulus presentation sequence was rearranged in the final study from that of the pilot study. The pilot

Table 5.7 Transitivity Check of the Four Organizational Complexity Triad Pairs.

| Pair # | Triad Stimulus Responses | Trans/ Intrans | Frequency | Intrans. Index | Percent Inconsist. | Percent Consistent |
|---|---|---|---|---|---|---|
| 1 | (1-2-1) | T | 57 | 4/61 | 6.6 | 93.4 |
| | (1-2-3) | I | 4 | | | |
| 2 | (2-3-3) | T | 39 | 6/39 | 13.3 | 86.7 |
| | (2-3-1) | I | 6 | | | |
| 3 | (1-3-3) | T | 103 | 0/215 | 0 | 100.0 |
| | (1-3-1) | T | 112 | | | |
| 4 | (2-2-1) | T | 35 | 0/77 | 0 | 100.0 |
| | (2-2-3) | T | 42 | | | |
| Total | | | 398 | | 2.5 | 97.5 |

scale values (which only had an N of 97) are illustrated in table 5.8.

Table 5.8 Derived Scale Values, T-Scores and Converted Percentages for Each Complexity Determinant in the Pilot Study.

| Stimulus Number | Determinant | Derived Scale Value | T-Score | Converted Percent |
|---|---|---|---|---|
| 1 | V.D. | 0.887 | 58.87 | 39.24 |
| 2 | H.D. | 0.511 | 55.11 | 36.74 |
| 3 | S.D. | -1.397 | 36.03 | 24.02 |
| Total | | | 150.01 | 100.00 |

Table 5.9, which compares the pilot and final study scale values, indicated the results were very similar, thereby suggesting the numerically derived measure of complexity passed the test-retest criterion for reliability.

It was concluded the numerically derived measure of complexity is a reasonably valid and reliable instrument because it has face

Table 5.9 Comparison of Scale Pilot and Final Study Scale Values, T-scores and Converted Percentages.

| Complexity Determinant | Final | | | Pilot | | | Difference | | |
|---|---|---|---|---|---|---|---|---|---|
| | Scale Value | T-Score | Convert % | Scale Value | T-Score | Convert % | Scale Value | T-Score | Convert % |
| V.D. | 0.921 | 59.21 | 39.48 | 0.887 | 58.87 | 39.24 | -0.034 | -0.34 | -0.24 |
| H.D. | 0.468 | 54.68 | 36.46 | 0.511 | 55.11 | 36.74 | 0.043 | 0.43 | 0.28 |
| S.D. | -1.390 | 36.10 | 24.06 | -1.397 | 36.03 | 24.02 | -0.007 | -0.07 | -0.04 |

validity, internal consistency reliability and consistency over time reliability. However, much further research is required.

## PERCEIVED LEVELS OF ORGANIZATIONAL COMPLEXITY

Table 5.10, which summarizes the distribution of respondents by the perceived levels of complexity, suggested that most (70.2%) of the respondents felt their organization was low in complexity. Only 8.3% felt their organization was either very or extremely complex. This response appears logical in comparison to the data portrayed in Tables 5.2, 5.3 and 5.5. Table 5.2 showed that 58.6% of the 423 respondents functioned in an organization with seven or less position levels. Table 5.3 illustrated that 57.9% or 245 respondents functioned in systems with eight or less individually administered sites. Finally, Table 5.5 revealed that 52.3% or 221 respondents functioned in a system with seven or less individual divisions or departments in the schools and central office.

It is also interesting to compare the perceived complexity scores of principals, superintendents and secretary-treasurers as shown in Table 5.11. Almost twice as many secretary-treasurers as principals felt their organization was "scarcely" complex. As well, 43.6% of the

Table 5.10 Distribution of Respondents by Perceived Complexity

| Level of Perceived Complexity | Frequency | % |
|---|---|---|
| 1 - Scarcely | 140 | 33.1 |
| 2 - Somewhat | 157 | 37.1 |
| 3 - Quite | 85 | 20.1 |
| 4 - Very | 30 | 7.1 |
| 5 - Extremely | 5 | 1.2 |
| Missing | 6 | 1.4 |
| Total | 423 | 100 |
| Mean 2.048 | | |
| S.D. 0.967 | | |

superintendents, or 15.0% more than principals, indicated they functioned in a "scarcely" complex organization.

Table 5.11 Distribution of Perceived Levels of Complexity Scores by Principal, Superintendent and Secretary-Treasurer Groups.

| Level of Perceived Complexity | Principals | | Superintendents | | Secretary-Treasurers | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| 1. Scarcely | 93 | 28.6 | 24 | 43.6 | 23 | 53.5 |
| 2. Somewhat | 127 | 39.1 | 19 | 34.6 | 11 | 25.6 |
| 3. Quite | 74 | 22.8 | 6 | 10.9 | 5 | 11.6 |
| 4. Very | 26 | 8.0 | 1 | 1.8 | 3 | 7.0 |
| 5. Extremely | 2 | 0.6 | 3 | 5.5 | 0 | 0.0 |
| Missing | 3 | 0.9 | 2 | 3.6 | 1 | 2.3 |
| Total | 325 | 100.0 | 55 | 100.0 | 43 | 100.0 |

## LEADERSHIP STYLE

This section describes the LPC scores of all the respondents and compares those results to the LPC scores of principals, superintendents and secretary-treasurers. Table 5.12, which compares the LPC scores, revealed that the average raw score was 72.6 with a mean of 4.5.

Fiedler (1976: 44) suggested that the average raw scores for various samples range from 51.0 to 66.1 while the mean scores range from 3.19 to 4.13. A comparison of Fiedler's samples to Table 5.11 reveals that the population in this study scored slightly higher on the average raw score (72.6 compared to 66.1) and consequently higher on the mean score (4.5 compared to 4.13). This difference could be due to the study sample being slightly more relationship-oriented than other samples.

Table 5.12 Comparison of Low, Middle and High LPC Group Scores.

| Selected Data | LPC Groups<br>(High)<br>Relationship | <br>(Medium)<br>Socioindependent | <br>(Low)<br>Task | <br><br>Total |
|---|---|---|---|---|
| Number (%) | 139(32.8) | 142(33.6) | 142(33.6) | 423(100.0) |
| Average Raw Score | 91.7 | 71.4 | 55.1 | 72.6 |
| Mean Score | 5.7 | 4.5 | 3.4 | 4.5 |
| Range | 78-128 | 66-77 | 19-65 | 19-128 |
| Range Mean | 4.9-8.0 | 4.1-4.8 | 1.2-4.0 | 1.2-8.0 |

A comparison of the LPC scores of the principals, superintendents and secretary-treasurers, as illustrated in Table 5.13, suggested that the principals are slightly more relationship-oriented than the secretary-treasurers, and considerably more than the superintendents. Over 35% of the principals had a high LPC score while only 18.2% of the superintendents had a high LPC. The converse relationship is not as acute, ie., 32% of the principals had a low LPC score while 40.0% of the superintendents had a low LPC score. There were also proportionately more superintendents and secretary-treasurers in the socioindependent or middle LPC group (41.8% and 39.6% respectively, as compared to 31.4% for principals). As well, the superintendents deviated considerably from the sample scores. It was concluded that the superintendents in the study tended to be more task-oriented and less relationship-oriented than the secretary-treasurers and particularly the principals. However, the mean scores were exceptionally similar; for example, the mean score of all three socioindependent groups (middle LPC group) was 4.5.

Table 5.13 Comparison of Principal, Superintendent and Secretary-Treasurer LPC Scores

| LPC Group | # | % | Average Raw Score | Mean Score | Range | Range Mean |
|---|---|---|---|---|---|---|
| Principals | | | | | | |
| Low | 107 | 32.9 | 55.3 | 3.5 | 19-65 | 1.2-4.0 |
| Middle | 102 | 31.4 | 71.5 | 4.5 | 66-77 | 4.1-4.8 |
| High | 116 | 35.7 | 91.0 | 5.7 | 78-128 | 4.9-8.0 |
| Total | 325 | 100.0 | 73.1 | 4.6 | 19-128 | 1.2-8.0 |
| Superintendents | | | | | | |
| Low | 22 | 40.0 | 54.9 | 3.4 | 23-65 | 1.4-4.1 |
| Middle | 23 | 41.8 | 71.2 | 4.5 | 67-76 | 4.2-4.8 |
| High | 10 | 18.2 | 101.5 | 6.3 | 86-120 | 5.4-7.5 |
| Total | 55 | 100.0 | 70.2 | 4.4 | 23-120 | 1.4-7.5 |
| Secretary-Tres. | | | | | | |
| Low | 13 | 30.2 | 53.6 | 3.4 | 27-64 | 1.7-4.0 |
| Middle | 17 | 39.6 | 71.2 | 4.5 | 66-77 | 4.1-4.8 |
| High | 13 | 30.2 | 91.3 | 5.7 | 78-116 | 4.9-7.3 |
| Total | 43 | 100.0 | 72.0 | 4.5 | 27-116 | 1.7-7.3 |

## ADMINISTRATIVE POSITION

Table 5.14 reveals the distribution of respondents by administrative position. Principals represented 76.8 percent of the study population. This proportion is very similar to the questionnaire distribution rate for principals (77.1%) as shown in Appendix C.

Table 5.14 Distribution of Respondents by Administrative Position

| Administrative Position | Number | Percent |
|---|---|---|
| Principals | 325 | 76.8 |
| Superintendents | 55 | 13.0 |
| Secretary-Treasurers | 43 | 10.2 |
| Total | 423 | 100.0 |

## SUMMARY

Chapter five dealt with the measurement and analysis of the three independent variables. Section one described the methodology and data analysis of the numerically derived organizational complexity composite score. The three major elements of complexity were identified as horizontal differentiation, vertical differentiation and spatial dispersion. The configuration count of each element was applied to the appropriate scale value which, in turn, was derived through the Law of Comparative Judgement and the Force Pair Comparison technique. The second section presented the data associated with perceived levels of complexity. The third section described and analyzed the data pertaining to leadership style. The respondents were grouped into task-oriented, socioindependent and relationship oriented leadership style groups depending upon their scores on the LPC scale. The fourth section described the respondents by administrative positions of principals, superintendents and secretary-treasurers.

# CHAPTER VI

## DATA ANALYSIS AND RESEARCH FINDINGS

The purpose of this chapter is to present the study data associated with the eight sub-problems, to analyze and interpret those data, and to report on the findings. The first section deals with factor matching while the second section describes the data conversion and statistical treatment of the HRA attitude data. The next eight sections report on the data results, interpretation and findings associated with each of the eight stated sub-problems.

### FACTOR MATCHING

The factor matching test was conducted for the final study for the following reasons: (1) to retest using a larger final sample (423 as compared to 97), (2) to verify appropriateness of the principal component approach, and (3) to provide additional verification of the potency and evaluative dimensions. Table 6.1 shows the principal component data while Table 6.2 displays the image axis data. The Tucker Coefficients (unrotated) were 0.9996 for the evaluative dimension and 0.9547 for the potency dimension. Since the lowest coefficient was 0.9547, it was concluded that the principal component approach was appropriate for the final study, and in addition, the dimensions were further verified.

### ANALYSIS OF VARIANCE AND DATA PREPARATION

Certain types of dependent variables often require special

Table 6.1 Varimax Rotated Principal Component Factor Analysis of 13 Scale Items Included in the Final Study

| Test Item # | Scale Description | Evaluative Factor | Potency Factor | $H^2$ |
|---|---|---|---|---|
| 1. | Good-Bad | 0.829 | 0.068 | 0.692 |
| 2. | Meaningful-Meaningless | 0.846 | 0.083 | 0.723 |
| 3. | Foolish-Wise | 0.818 | 0.112 | 0.682 |
| 4. | Worthless-Valuable | 0.829 | 0.096 | 0.696 |
| 5. | Positive-Negative | 0.722 | 0.071 | 0.526 |
| 6. | Soft-Hard | 0.094 | 0.806 | 0.658 |
| 7. | Heavy-Light | 0.057 | 0.795 | 0.635 |
| 8. | Humorous-Serious | 0.210 | 0.433 | 0.231 |
| 9. | Realistic-Unrealistic | 0.812 | 0.027 | 0.660 |
| 10. | Important-Unimportant | 0.860 | 0.054 | 0.742 |
| 11. | Irrelevant-Relevant | 0.833 | 0.075 | 0.700 |
| 12. | Efficient-Inefficient | 0.680 | 0.090 | 0.470 |
| 13. | Regressive-Progressive | 0.777 | 0.076 | 0.610 |
|  | Eigen Values | 6.582 | 1.443 |  |
|  | Variance | 6.496 | 1.530 |  |
|  | Total Variance (%) | 49.971 | 11.767 |  |
|  | Common Variance (%) | 80.941 | 19.059 |  |
|  | Sum of Communalities |  |  | 8.026 |
|  | Total Variance (%) Accounted For |  |  | 61.737 |

Table 6.2 Varimax Rotated Image Axis Factor Analysis of 13 Scale Items Included in the Final Study

| Test Item # | Scale Description | Evaluative Factor | Potency Factor | $H^2$ |
|---|---|---|---|---|
| 1. | Good-Bad | 0.791 | 0.088 | 0.633 |
| 2. | Meaningful-Meaningless | 0.811 | 0.096 | 0.668 |
| 3. | Foolish-Wise | 0.770 | 0.124 | 0.608 |
| 4. | Worthless-Valuable | 0.785 | 0.111 | 0.629 |
| 5. | Positive-Negative | 0.660 | 0.085 | 0.443 |
| 6. | Soft-Hard | 0.044 | 0.349 | 0.124 |
| 7. | Heavy-Light | 0.089 | 0.348 | 0.129 |
| 8. | Humorous-Serious | 0.206 | 0.189 | 0.078 |
| 9. | Realistic-Unrealistic | 0.759 | 0.058 | 0.580 |
| 10. | Important-Unimportant | 0.820 | 0.070 | 0.677 |
| 11. | Irrelevant-Relevant | 0.794 | 0.086 | 0.637 |
| 12. | Efficient-Inefficient | 0.616 | 0.091 | 0.387 |
| 13. | Regressive-Progressive | 0.718 | 0.090 | 0.524 |
|  | Eigen Values | 5.852 | 0.266 |  |
|  | Variance | 5.755 | 0.363 |  |
|  | Total Variance (%) | 44.268 | 2.791 |  |
|  | Common Variance (%) | 94.070 | 5.930 |  |
|  | Sum of Communalities |  |  | 6.118 |
|  | Total Variance (%) Accounted For |  |  | 47.059 |

transformations before analysis of variance tests can be conducted (Harshbarger, 1971:288). The respondents' thirteen item test scores were converted to factor scores with a mean of 50 and standardard deviation of 10. The converted score takes into account the factor loading scores and hence represents a closer relationship to the evaluative and potency dimensions. Factor scores were computed for the evaluative and potency dimensions as well as for the HRA causal, intervening and end-result variables. Concept number six was used as a control item (amount and cost of supplies) and was eliminated from the analysis.

Two methods were used to display the relevant data. First, the factor scores pertaining to each sub-problem were plotted in semantic space in order to describe the attitude and strength of attitude for each independent variable grouping of respondents. The factor scores were converted into a format used by White and Hall (1970:340) and illustrated in Chapter Four; a factor score of 50 was portrayed as 0, 51 was shown as +1.0, 51.50 as +1.50, while 49 was displayed as -1.0 and 48.50 as -1.50, etc. Upon completion of the semantic space description, the ANOVA results are given in the form of regular ANOVA tables.

## SUB-PROBLEM ONE: ADMINISTRATIVE POSITION AND HRA CONCEPT

Sub-problem one addressed the question of attitudes and strength of attitudes and significant differences in the attitudes and strength of attitudes of principals, superintendents and secretary-treasurers toward HRA. Figure 6.1 indicated secretary-treasurers had the most positive attitude (+1.63). Superintendents had an evaluative score of +0.27 while the principals had a score of -0.26. Secretary-treasurers had a potency dimension reading of +1.63 while the superintendents and principals had

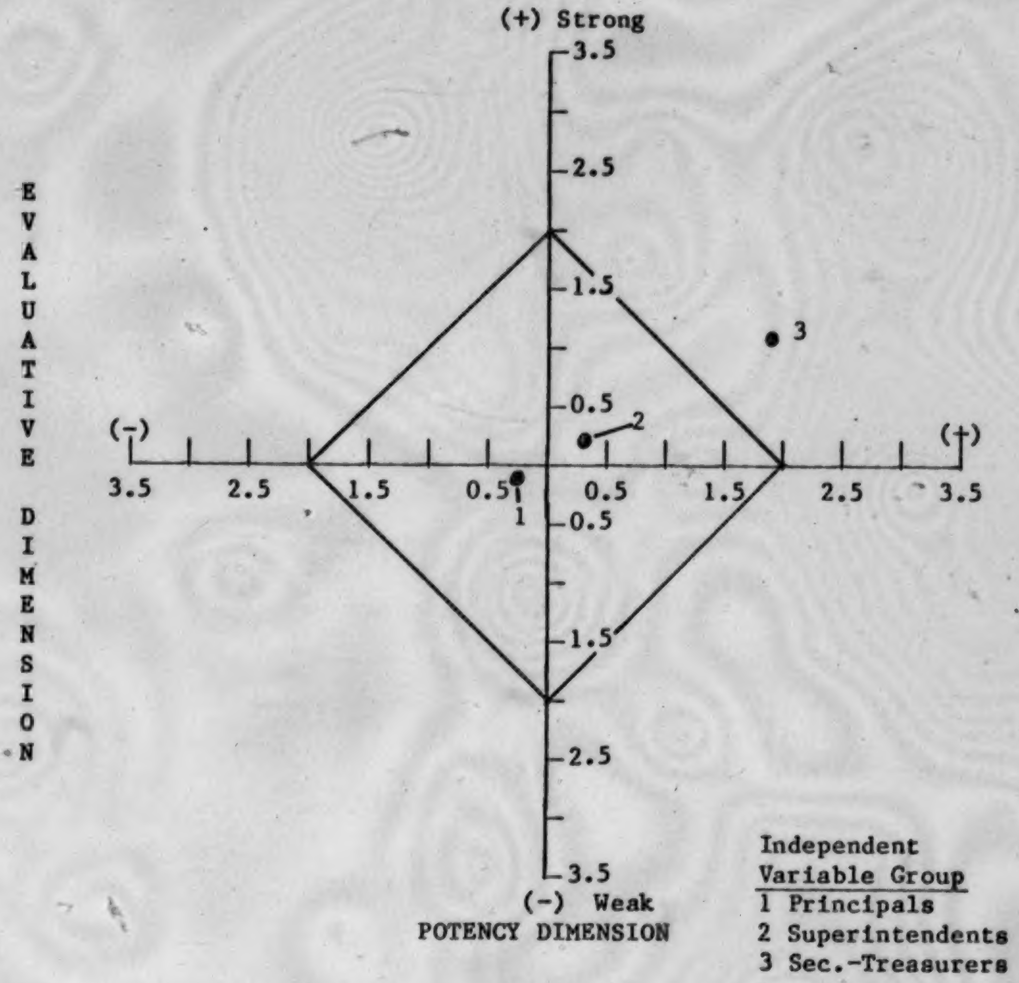


Figure 6.1 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward HRA.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\overline{X}$ | Calculated $\overline{X}$ | Semantic Space Plot | # | Name | Std. $\overline{X}$ | Calculated $\overline{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Prin. | 50.0 | 49.73 | -0.26 | 1 | Prin. | 50.0 | 49.85 | -0.15 |
| 2 | Supt. | 50.0 | 50.27 | +0.27 | 2 | Supt. | 50.0 | 50.32 | +0.32 |
| 3 | Sec-Tres. | 50.0 | 51.63 | +1.63 | 3 | Sec-Tres. | 50.0 | 50.66 | +0.66 |

Table 6.3 Comparison of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward HRA: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Principals | 325 | 49.73 | 7.88 | 1,2 | 0.89 |
| | 2 | Superintendent | 55 | 50.27 | 5.88 | 2,3 | 0.67 |
| | 3 | Sec.-Treasurer | 43 | 51.63 | 7.17 | 1,3 | 0.30 |
| | F Ratio = 1.23 | | Probability = 0.29 | | | | |
| POTENCY | 1 | Principals | 325 | 49.85 | 6.90 | 1,2 | 0.88 |
| | 2 | Superintendent | 55 | 50.32 | 5.41 | 2,3 | 0.96 |
| | 3 | Sec.-Treasurer | 43 | 50.66 | 6.34 | 1,3 | 0.75 |
| | F Ratio = 0.36 | | Probability = 0.69 | | | | |

potency dimension readings of +0.32 and -0.15 respectively.

Since Table 6.3 showed no statistically significant differences, it was concluded there were no significant differences in the attitudes and strength of attitudes of principals, superintendents and secretary-treasurers toward HRA.

## SUB-PROBLEM TWO: LEADERSHIP STYLE AND HRA

Sub-problem two addressed the question of attitudes and strength of attitudes and significant differences in the attitudes and strength of attitudes of relationship-oriented, socioindependent and task-oriented respondents toward HRA. Figure 6.2 indicated relationship-oriented administrators had a favorable evaluative dimension score of +1.80 while socioindependent and task-oriented administrators had unfavorable scores of -0.61 and -1.17 respectively. The relationship-oriented administrators had a weak potency score of -0.11 as did the socioindependent group (-0.65), while the task-oriented administrators had a score of +0.74.

Table 6.4 revealed a F-ratio of 6.19 and a probability of <.01 for the evaluative dimension. This probability identified a significant difference. The homogeneity of variance condition was satisfied (0.72). Table 6.4 disclosed no significant differences in terms of the potency dimension. The Scheffé test revealed the means between the socioindependent and relationship-oriented administrators were significantly different at the 0.02 probability level while the means between the relationship-oriented (high LPC score) and task-oriented administrators were significantly different at the <.01 probability level. The attitude of the relationship-oriented administrators toward HRA was significantly more positive than the attitude of the task-oriented and socioindependent administrators, while the strength of the attitudes did not differ significantly.

## SUB-PROBLEM THREE: NUMERICALLY DERIVED COMPLEXITY AND HRA CONCEPT

Sub-problem three addressed the question of attitudes and strength of attitudes and significant differences in the attitudes and strength of attitudes toward HRA by administrators who functioned in low, medium or highly complex organizations, as derived numerically. Figure 6.3 revealed all the respondents had a favorable evaluative score; +0.27, +0.61 and +0.10 respectively. Respondents who functioned in organizations of medium complexity had a potency strength score of +0.67 while respondents who functioned in organizations of low and high complexity had weak potency dimension scores of -0.61 and -0.26 respectively.

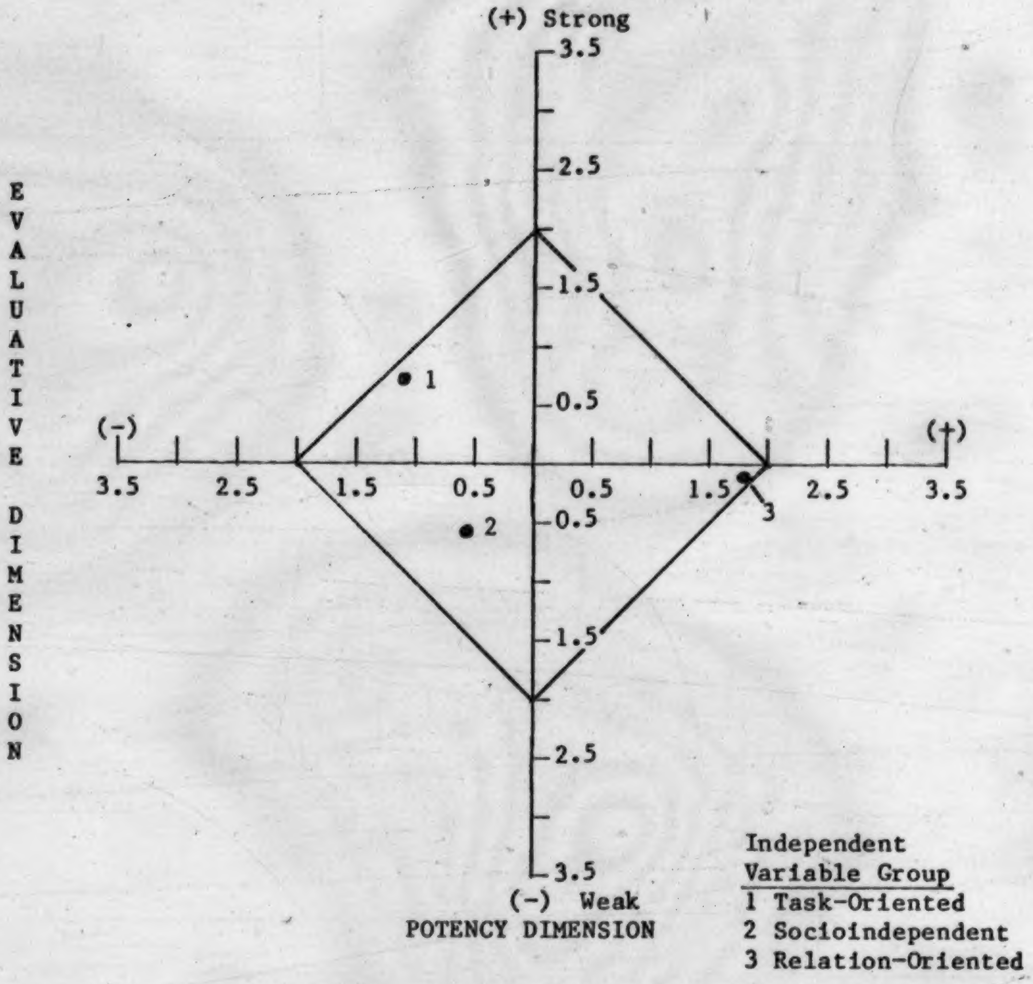


Figure 6.2 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Task-Oriented, Socioindependent and Relationship-Oriented Administrators Toward HRA.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\overline{X}$ | Calculated $\overline{X}$ | Semantic Space Plot | # | Name | Std. $\overline{X}$ | Calculated $\overline{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Task | 50.0 | 48.83 | -1.17 | 1 | Task | 50.0 | 50.74 | +0.74 |
| 2 | Socio | 50.0 | 49.39 | -0.61 | 2 | Socio | 50.0 | 49.35 | -0.65 |
| 3 | Relation | 50.0 | 51.80 | +1.80 | 3 | Relation | 50.0 | 49.89 | -0.11 |

Table 6.4 Comparison of Attitudes and Strength of Attitudes of Task-Oriented, Socioindependent, and Relationship-Oriented Administrators Toward HRA: Summary of Analysis of Variance Between Means

| DIM | Group | | Frequency (N) | Mean (X) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Task-Oriented | 142 | 48.83 | 7.70 | 1,2 | 0.81 |
| | 2 | Socioind. | 142 | 49.39 | 7.56 | 2,3 | 0.02 |
| | 3 | Relationship | 139 | 51.80 | 7.20 | 1,3 | <0.01* |
| | F Ratio = 6.19 | | Probability = <0.01 | | | | |
| POTENCY | 1 | Task-Oriented | 142 | 50.74 | 6.44 | 1,2 | 0.21 |
| | 2 | Socioind. | 142 | 49.35 | 5.71 | 2,3 | 0.78 |
| | 3 | Relationship | 142 | 49.89 | 7.68 | 1,3 | 0.56 |
| | F Ratio = 1.58 | | Probability = 0.20 | | | | |

*Significant at the $<0.0_1$ level.

Since Table 6.5 revealed no statistically significant differences among the mean evaluative and potency scores, it was concluded there were no significant differences in the attitudes and strength of attitudes toward HRA of respondents who functioned in organizations of low, medium and high complexity.

## SUB-PROBLEM FOUR: PERCEIVED COMPLEXITY AND HRA CONCEPT

Sub-problem four addressed the question of the attitudes and strength of attitudes and significant differences in the attitudes and strength of attitudes toward HRA of respondents who perceived themselves functioning in organizations of either low, medium or high complexity.

Figure 6.4 indicated the respondents who perceived themselves as

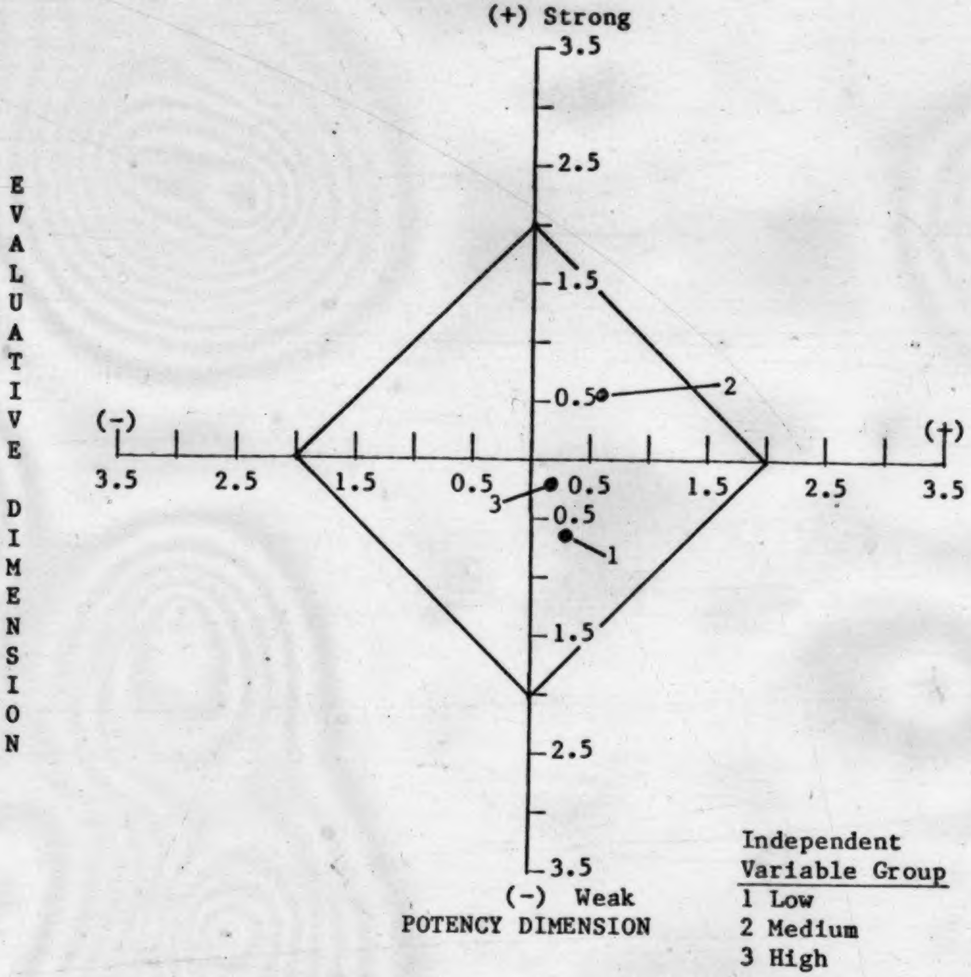


Figure 6.3 Semantic Space Coordinates of Attitudes and Strength of Attitudes Toward HRA of Administrators Who Functioned in Low, Medium and High Complexity Organizations as Derived Numerically.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\overline{X}$ | Calculated $\overline{X}$ | Semantic Space Plot | # | Name | Std. $\overline{X}$ | Calculated $\overline{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Low | 50.0 | 50.27 | +0.27 | 1 | Low | 50.0 | 49.39 | -0.61 |
| 2 | Medium | 50.0 | 49.39 | +0.61 | 2 | Medium | 50.0 | 50.67 | +0.67 |
| 3 | High | 50.0 | 50.10 | +0.10 | 3 | High | 50.0 | 49.74 | -0.26 |

Table 6.5 Comparison of Attitudes and Strength of Attitudes of Respondents who Functioned in Low, Medium or High Complexity Organizations Toward HRA: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 132 | 50.27 | 7.83 | 1,2 | 0.63 |
| | 2 | Medium | 136 | 49.39 | 7.39 | 2,3 | 0.74 |
| | 3 | High | 130 | 50.10 | 7.72 | 1,3 | 0.98 |
| | F Ratio = 0.51 | | Probability = 0.60 | | | | |
| POTENCY | 1 | Low | 132 | 49.39 | 6.19 | 1,2 | 0.27 |
| | 2 | Medium | 136 | 50.67 | 6.82 | 2,3 | 0.51 |
| | 3 | High | 130 | 49.74 | 6.61 | 1,3 | 0.90 |
| | F Ratio = 1.37 | | Probability = 0.25 | | | | |

functioning in organizations that are medium or high in complexity had negative evaluative scores of -0.06 and -0.61, respectively, while those who rated themselves as functioning in low complexity organizations had a positive +0.18 score. In terms of strength of attitude, the respondents who perceived themselves functioning in low or medium complexity organizations had weak potency scores of -0.12 and -0.78 respectively while the third group had a strong potency score of +2.71.

Table 6.6, which shows the appropriate ANOVA data, reported an F-ratio of 0.18 and a probability of 0.83 for the evaluative dimension. This probability revealed no significant differences in the attitudes of these three groups toward HRA. However, an F-ratio of 3.55 and probability of 0.03 in terms of strength of attitudes, suggested the

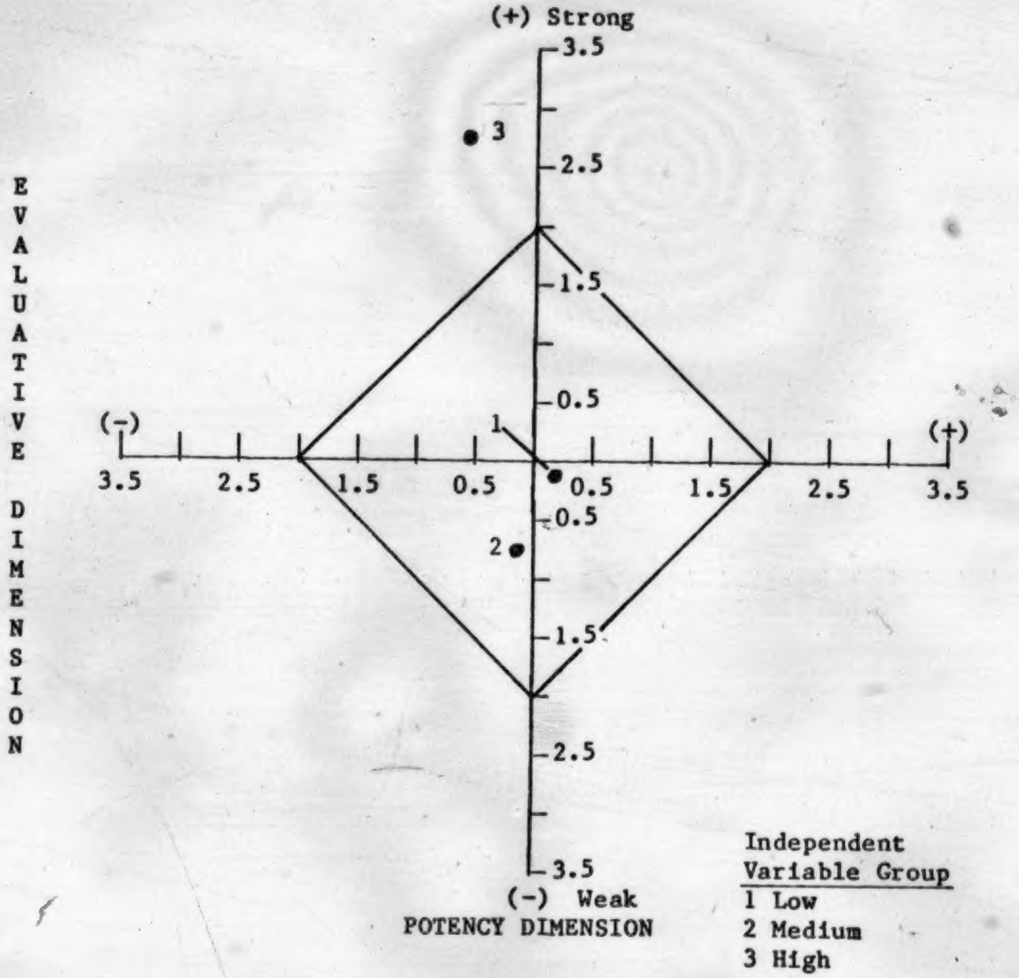


Figure 6.4 Semantic Space Coordinates of Attitudes and Strength of Attitudes Toward HRA of Respondents who Perceived Themselves Functioning in Low, Medium or High Complexity Organizations.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | # | Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Low | 50.0 | 50.18 | +0.18 | 1 | Low | 50.0 | 49.88 | -0.12 |
| 2 | Medium | 50.0 | 49.94 | -0.06 | 2 | Medium | 50.0 | 49.22 | -0.78 |
| 3 | High | 50.0 | 49.39 | -0.61 | 3 | High | 50.0 | 52.71 | +2.71 |

Table 6.6 Comparison of Attitudes and Strength of Attitudes of Respondents who Perceived Themselves Functioning in Low, Medium or High Complexity Organizations Toward HRA: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 297 | 50.18 | 7.48 | 1,2 | 0.96 |
| | 2 | Medium | 85 | 49.94 | 7.99 | 2,3 | 0.93 |
| | 3 | High | 35 | 49.39 | 7.32 | 1,3 | 0.84 |
| | F Ratio = 0.18 | | | Probability = 0.83 | | | |
| POTENCY | 1 | Low | 297 | 49.88 | 6.16 | 1,2 | 0.72 |
| | 2 | Medium | 85 | 49.22 | 7.51 | 2,3 | 0.03* |
| | 3 | High | 35 | 52.71 | 8.26 | 1,3 | 0.05 |
| | F Ratio = 3.55 | | | Probability = 0.03 | | | |

*Significant at the 0.03 level (homogeniety assumption not met).

existence of significant differences between at least two groups. The homogeneity of variance test revealed a probability of 0.008 which meant the assumption was not met. Since the groups were unequal in size, the F-ratio and Scheffé test significance levels were set at the 0.03 level.

Table 6.6 revealed that the low and high complexity group means were different at the 0.05 probability level while the medium and high complexity group means were different at the 0.03 level. It can be concluded that there is a significant difference (0.03 probability level) in the strength of attitude of respondents who perceived themselves as functioning in organizations that are either medium or high in complexity. The strength of attitude of the respondents who perceived themselves as functioning in highly complex organizations was significantly stronger than respondents who perceived of themselves as functioning in organizations of medium complexity.

## SUB-PROBLEM FIVE: ADMINISTRATIVE POSITION AND HRA CAUSAL, INTERVENING AND END-RESULT VARIABLES

Sub-problem 5 attempted to ascertain the attitudes and strength of attitudes and significant differences in the attitudes and strength of attitudes of principals, secretary-treasurers and superintendents toward HRA causal, intervening and end-result variables. While the first four sub-problems combined all nine HRA concepts into one composite HRA measure of attitude and strength of attitude, sub-problems five to eight combined various concepts to arrive at a measure of each HRA variable. The concepts of managerial organizational behavior, inventory of skills and competencies and leadership style were combined to arrive at the HRA causal variable scores. Motivation level, organizational loyalty, inventory of attitudes, and organizational behavior of peers and subordinates were grouped to arrive at the HRA intervening variable scores. Satisfaction and productivity were combined to derive the HRA end-result variable scores. Each of the three HRA variables are treated separately in the following three sections.

### Administrative Position and HRA Causal Variables

Figure 6.5 indicated principals, superintendents and secretary-treasurers all had positive evaluative scores of +0.27, +1.19 and +2.23 respectively, while the potency scores were +0.47 for principals, +0.90 for superintendents and +2.17 for secretary-treasurers. Table 6.7 disclosed no significant differences.

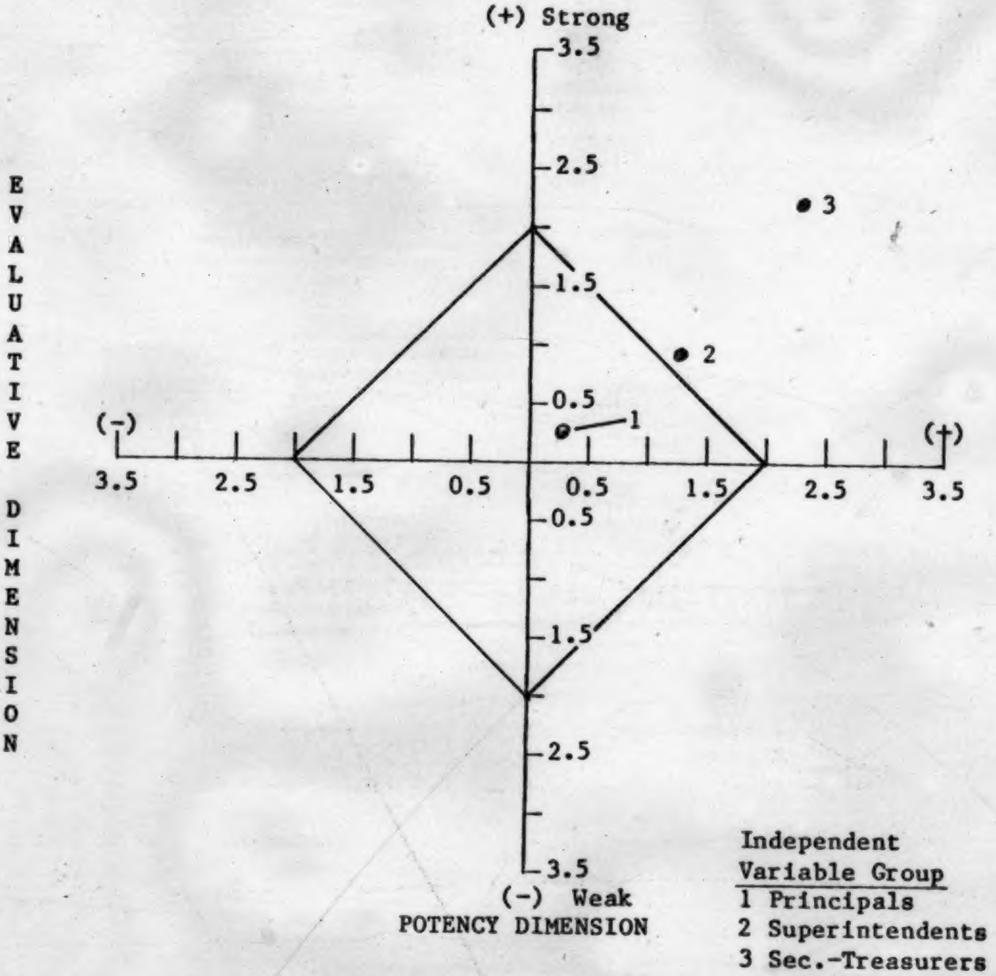


Figure 6.5 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward HRA Casual Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{\bar{X}}$ | Calculated $\bar{\bar{X}}$ | Semantic Space Plot | # | Name | Std. $\bar{\bar{X}}$ | Calculated $\bar{\bar{X}}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Prin. | 50.0 | 50.27 | +0.27 | 1 | Prin. | 50.0 | 50.47 | +0.47 |
| 2 | Supt. | 50.0 | 51.19 | +1.19 | 2 | Supt. | 50.0 | 50.90 | +0.90 |
| 3 | Sec.-Treas. | 50.0 | 52.23 | +2.23 | 3 | Sec.-Treas. | 50.0 | 52.17 | +2.17 |

Table 6.7 Comparison of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward the HRA Causal Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Principals | 325 | 50.27 | 8.07 | 1,2 | 0.73 |
| | 2 | Superintendent | 55 | 51.19 | 6.40 | 2,3 | 0.81 |
| | 3 | Sec. Treasurer | 43 | 52.23 | 9.27 | 1,3 | 0.32 |
| | F Ratio = 1.33 | | Probability = 0.26 | | | | |
| POTENCY | 1 | Principals | 325 | 50.47 | 7.95 | 1,2 | 0.93 |
| | 2 | Superintendent | 55 | 50.90 | 6.14 | 2,3 | 0.72 |
| | 3 | Sec. Treasurer | 43 | 52.17 | 8.37 | 1,3 | 0.40 |
| | F Ratio = 0.92 | | Probability = 0.39 | | | | |

### Administrative Position and HRA Intervening Variables

Figure 6.6 revealed secretary-treasurers had a positive evaluative score of +0.58 while principals and superintendents had negative evaluative scores of -1.16 and -0.80, respectively. Superintendents displayed strength in the potency score (+0.13) while principals and secretary-treasurers had weak potency scores of -0.17 and -0.02 respectively. Table 6.8 showed there was no statistically significant differences.

### Administrative Position and HRA End-Result Variables

Figure 6.7 indicated all three groups had positive evaluative scores; +0.73 for principals, +1.19 for superintendents and +2.81 for secretary-treasurers. All three groups had weak potency scores; -0.81, -0.12 and -0.22 for principals, superintendents and secretary-treasurers respectively. Table 6.9 indicated there were no significant differences.

## SUB-PROBLEM SIX: LEADERSHIP STYLE AND HRA CAUSAL, INTERVENING AND END-RESULT VARIABLES

Sub-problem six addressed the question of the attitudes and strength of attitudes and if there were any significant differences in the attitudes and strength of attitudes of educational administrators who were classified as relationship-oriented, socioindependent or task-oriented in terms of leadership style toward HRA causal, intervening and end-result variables. Each of the variables are treated separately.

### Leadership Style and HRA Causal Variables

Figure 6.8 indicated socioindependent and relationship-oriented administrators had positive evaluative scores of +0.10 and +2.06 while the task-oriented respondents had a slightly negative evaluative score of -0.35. In terms of attitude intensity, all three groups had strong potency scores; task-oriented, socioindependent and relationship-oriented administrators had scores of +1.57, +0.30 and +0.21 respectively.

Table 6.10 indicated an F-ratio of 3.64 and a probability of 0.03 for the evaluative dimension. The homogeneity assumption was satisfied at the 0.21 level. The relationship-oriented and task-oriented administrators differed significantly (0.04 probability level). Expressed differently, the relationship-oriented administrators had a significantly more positive attitude toward HRA causal variables than the relationship-oriented administrators. There were no significant

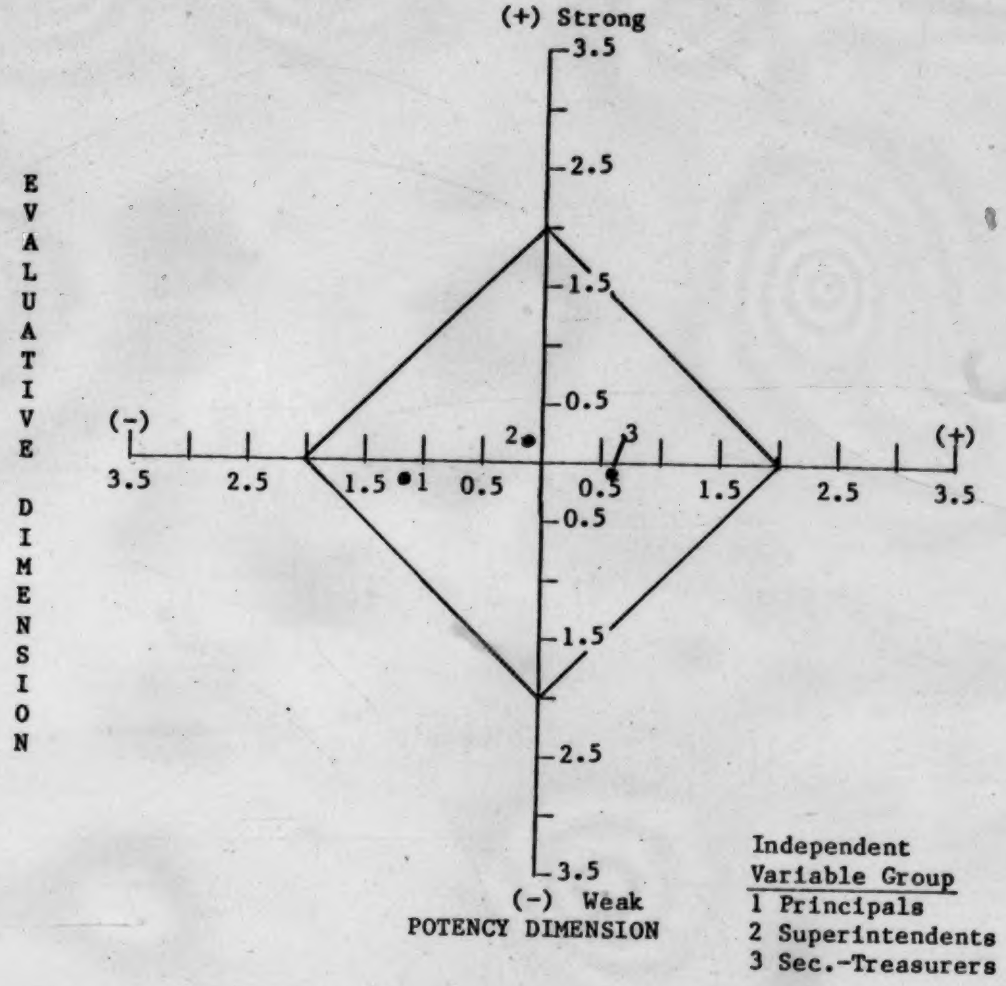


Figure 6.6 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward HRA Intervening Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group # | Group Name | Std. $\overline{X}$ | Calculated $\overline{X}$ | Semantic Space Plot | # | Name | Std. $\overline{X}$ | Calculated $\overline{X}$ | Seman. Space Plot |
| 1 | Prin. | 50.0 | 48.84 | -1.16 | 1 | Prin. | 50.0 | 49.73 | -0.17 |
| 2 | Supt. | 50.0 | 49.20 | -0.08 | 2 | Supt. | 50.0 | 50.13 | +0.13 |
| 3 | Sec.-Treas. | 50.0 | 50.58 | +0.58 | 3 | Sec. Treas. | 50.0 | 49.98 | -0.02 |

Table 6.8 Comparison of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward HRA Intervening Variables: Summary of Analysis of Variance Between Means.

| DIM | Group |  | Frequency (N) | Mean (X) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
|  | # | Name |  |  |  |  |  |
| EVAL | 1 | Principals | 325 | 48.84 | 8.85 | 1,2 | 0.97 |
|  | 2 | Superintendent | 55 | 49.20 | 6.40 | 2,3 | 0.69 |
|  | 3 | Sec.-Treasurer | 43 | 50.58 | 6.98 | 1,3 | 0.44 |
|  | F Ratio = 0.82 |  |  | Probability = 0.44 |  |  |  |
| POTENCY | 1 | Principals | 325 | 49.73 | 7.34 | 1,2 | 0.92 |
|  | 2 | Superintendent | 55 | 50.13 | 5.00 | 2,3 | 0.99 |
|  | 3 | Sec.-Treasurer | 43 | 49.98 | 7.65 | 1,3 | 0.97 |
|  | F Ratio = 0.10 |  |  | Probability = 0.91 |  |  |  |

differences for the potency dimension.

### Leadership Style and HRA Intervening Variables

Figure 6.9 revealed that each group had a different set of attitudes and intensity of attitudes. The task-oriented administrators had a negative evaluative score of -2.24 and strong potency score of +0.30. Relationship-oriented administrators had a favorable evaluative score of +0.97 and a strong potency score of +0.20. The socioindependent administrators had a negative evaluative score of -1.54 and a weak potency score of -1.08.

Table 6.11 revealed an F-ratio of 5.77 and a probability level of <0.01. The homogeneity of variance assumption was satisfied with a probability of 0.91. There were no significant differences with respect to the potency dimension. The evaluative score of relationship-oriented

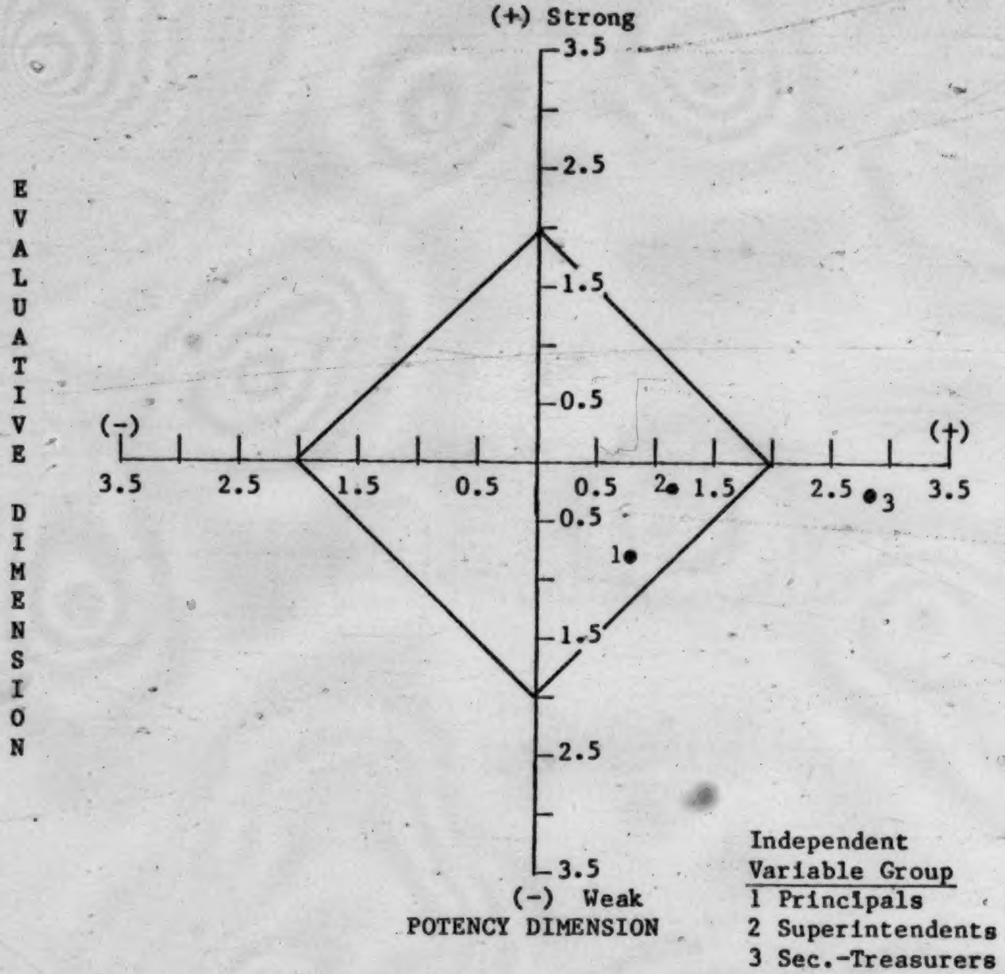


Figure 6.7 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward HRA End-Result Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | # | Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Prin. | 50.0 | 50.73 | +0.73 | 1 | Prin. | 50.0 | 49.19 | -0.81 |
| 2 | Supt. | 50.0 | 51.19 | +1.10 | 2 | Supt. | 50.0 | 49.88 | -0.21 |
| 3 | Sec.-Treas. | 50.0 | 52.81 | +2.81 | 3 | Sec. Treas. | 50.0 | 49.78 | -0.22 |

Table 6.9 Comparison of Attitudes and Strength of Attitudes of Principals, Superintendents and Secretary-Treasurers Toward HRA End-Result Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Principals | 325 | 50.73 | 8.59 | 1,2 | 0.93 |
| | 2 | Superintendent | 55 | 51.19 | 6.38 | 2,3 | 0.62 |
| | 3 | Sec.-Treasurer | 43 | 52.81 | 7.87 | 1,3 | 0.30 |
| | F Ratio = 1.21 | | Probability = 0.29 | | | | |
| POTENCY | 1 | Principals | 325 | 49.19 | 8.37 | 1,2 | 0.85 |
| | 2 | Superintendent | 55 | 49.88 | 7.36 | 2,3 | 0.99 |
| | 3 | Sec.-Treasurer | 43 | 49.78 | 8.80 | 1,3 | 0.90 |
| | F Ratio = 0.23 | | Probability = 0.79 | | | | |

administrators differed significantly from the evaluative scores of both the task-oriented and socioindependent administrators (probabilities of 0.01 and 0.04 respectively). The relationship-oriented administrators had a significantly more positive attitude (+0.97) than either the task-oriented (-2.24) or socioindependent (-1.54) administrators.

### Leadership Style and HRA End-Result Variables

Figure 6.10 suggested the socioindependent administrators had a positive evaluative score of +0.21 and weak potency score of -1.20. The relationship-oriented administrators had a positive evaluative score of +3.08 and a moderately weak potency dimension score of -1.17. Task-oriented administrators had a negative evaluative score of -0.23 and a strong potency score of +0.39.

Table 6.12 showed significant differences existed in the

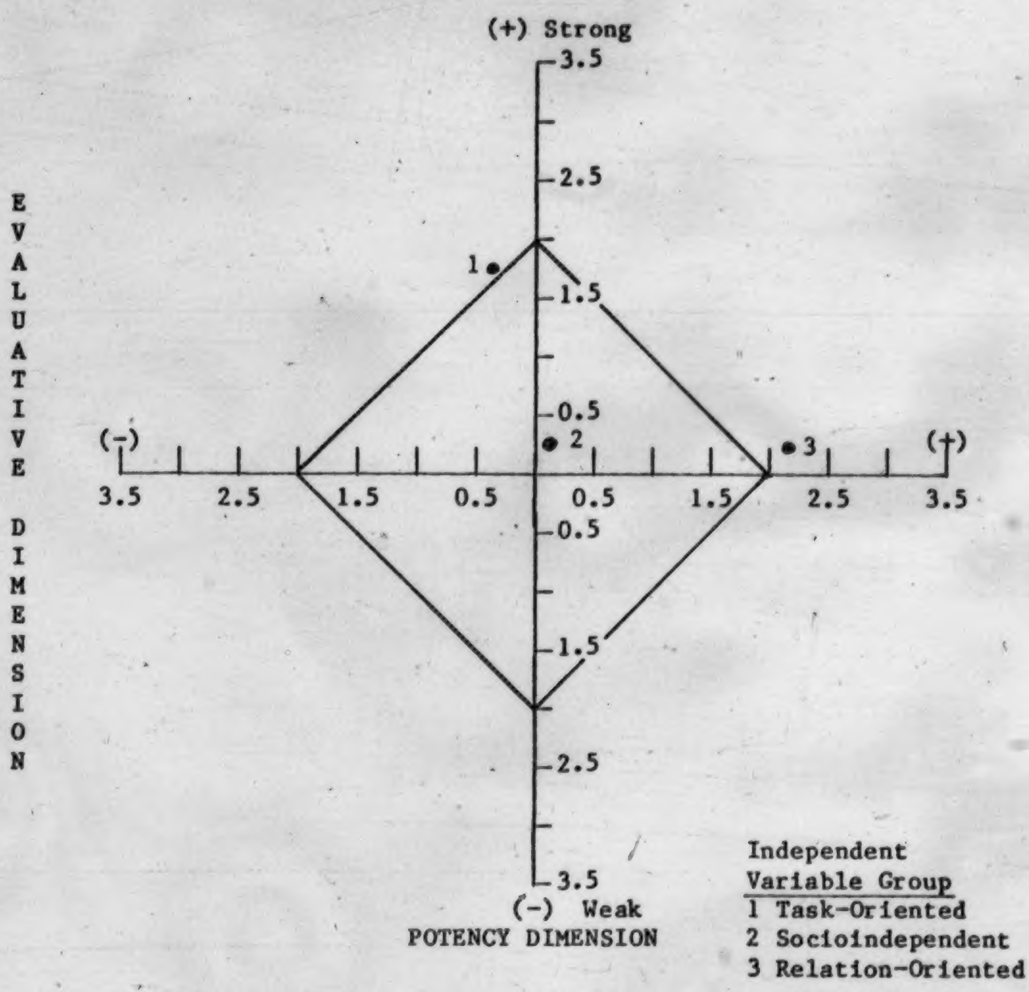


Figure 6.8 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Relationship-Oriented, Socioindependent and Task-Oriented Administrators Toward HRA Causal Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| # | Name | | | | # | Name | | | |
| 1 | Task | 50.0 | 49.65 | -0.35 | 1 | Task | 50.0 | 51.57 | +1.57 |
| 2 | Socio- | 50.0 | 50.10 | +0.10 | 2 | Socio- | 50.0 | 50.30 | +0.30 |
| 3 | Relation | 50.0 | 52.06 | +2.06 | 3 | Relation | 50.0 | 50.21 | +0.21 |

Table 6.10 Comparison of Attitudes and Strength of Attitudes of Relationship-Oriented, Socioindependent and Task-Oriented Administrators Toward HRA Causal Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean (X) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Task-Oriented | 142 | 49.65 | 8.30 | 1,2 | 0.89 |
| | 2 | Socioindepent. | 142 | 50.10 | 8.27 | 2,3 | 0.12 |
| | 3 | Relationship | 139 | 52.06 | 7.26 | 1,3 | 0.04 |
| | F Ratio = 3.64 | | Probability = 0.03 | | | | |
| POTENCY | 1 | Task-Oriented | 142 | 51.57 | 7.62 | 1,2 * | 0.38 |
| | 2 | Socioindepent. | 142 | 50.30 | 6.89 | 2,3 | 0.99 |
| | 3 | Relationship | 139 | 50.21 | 8.74 | 1,3 | 0.34 |
| | F Ratio = 1.36 | | Probability = 0.26 | | | | |

* significant at the 0.04 level.

evaluative dimension but not in the potency dimension. The F-ratio for the evaluative dimension was 6.80 while the probability of the differences being due to chance was <0.01. The homogeneity of variance condition was met with a probability of 0.45. The evaluative dimension scores of the relationship-oriented administrators differed significantly from the task-oriented and socioindependent administrator scores (probabilities of <0.01 and 0.01 respectively). The attitudes of the relationship-oriented administrators (+3.08) were significantly more positive than the attitudes of the task-oriented (-0.23) and socioindependent (+0.21) administrators while the strength of attitudes did not differ significantly.

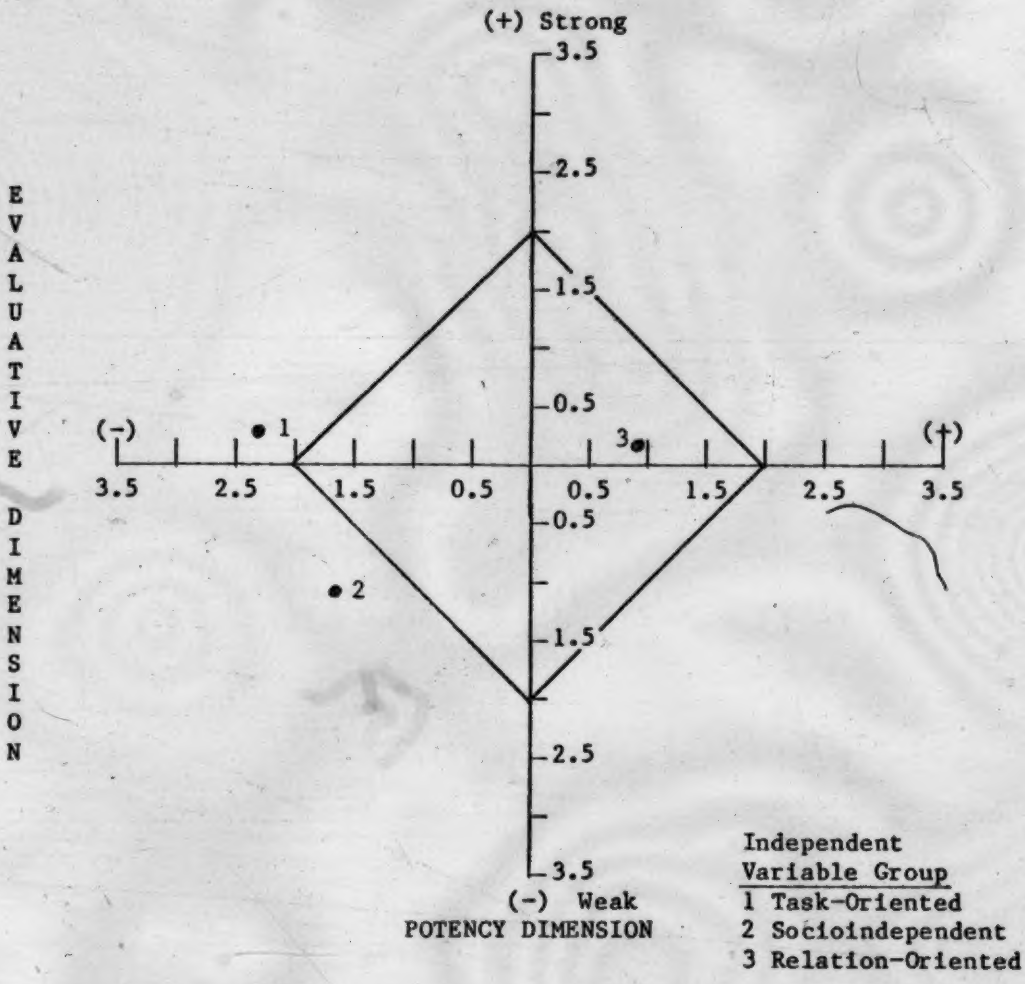


Figure 6.9 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Task-Oriented, Socioindependent and Relationship-Oriented Administrators toward HRA Intervening Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{\bar{X}}$ | Calculated $\bar{\bar{X}}$ | Semantic Space Plot | # | Name | Std. $\bar{\bar{X}}$ | Calculated $\bar{\bar{X}}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Task | 50.0 | 47.76 | -2.24 | 1 | Task | 50.0 | 50.30 | +0.30 |
| 2 | Socio- | 50.0 | 48.46 | -1.54 | 2 | Socio- | 50.0 | 48.92 | -1.08 |
| 3 | Relation | 50.0 | 50.97 | +0.97 | 3 | Relation | 50.0 | 50.20 | +0.20 |

Table 6.11 Comparison of Attitudes and Strength of Attitudes of Task-Oriented, Socioindependent and Relationship-Oriented Administrators Toward HRA Intervening Variables: Summary of Analysis of Variance Between Means.

| DIM | Group |  | Frequency (N) | Mean (X) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
|  | # | Name |  |  |  |  |  |
| EVAL | 1 | Task | 142 | 47.76 | 8.47 | 1,2 | 0.78 |
|  | 2 | Socioindepent. | 142 | 48.46 | 8.22 | 2,3 | 0.04 |
|  | 3 | Relationship | 139 | 50.97 | 8.22 | 1,3 | 0.01* |
|  | F Ratio = 5.77 |  |  | Probability = <0.001 |  |  |  |
| POTENCY | 1 | Task | 142 | 50.30 | 6.65 | 1,2 | 0.26 |
|  | 2 | Socioindepent. | 142 | 48.92 | 6.12 | 2,3 | 0.31 |
|  | 3 | Relationship | 139 | 50.20 | 8.31 | 1,3 | 0.99 |
|  | F Ratio = 1.67 |  |  | Probability = 0.19 |  |  |  |

*significant at the 0.01 level of probability.

## SUB-PROBLEM SEVEN: NUMERICALLY DERIVED COMPLEXITY AND HRA CAUSAL, INTERVENING AND END-RESULT VARIABLES

Sub-problem seven addressed the question of attitudes and strength of attitudes and significant differences in the attitudes and strength of attitudes of educational administrators who were classified as functioning in low, medium or highly complex organizations, as derived numerically, toward HRA causal, intervening and end-result variables. Each variable is treated separately in the following sections.

### Complexity and HRA Causal Variables

Figure 6.11 revealed the low, medium and high complexity groups had evaluative dimension scores of +1.07, -0.07 and 0.64 respectively,

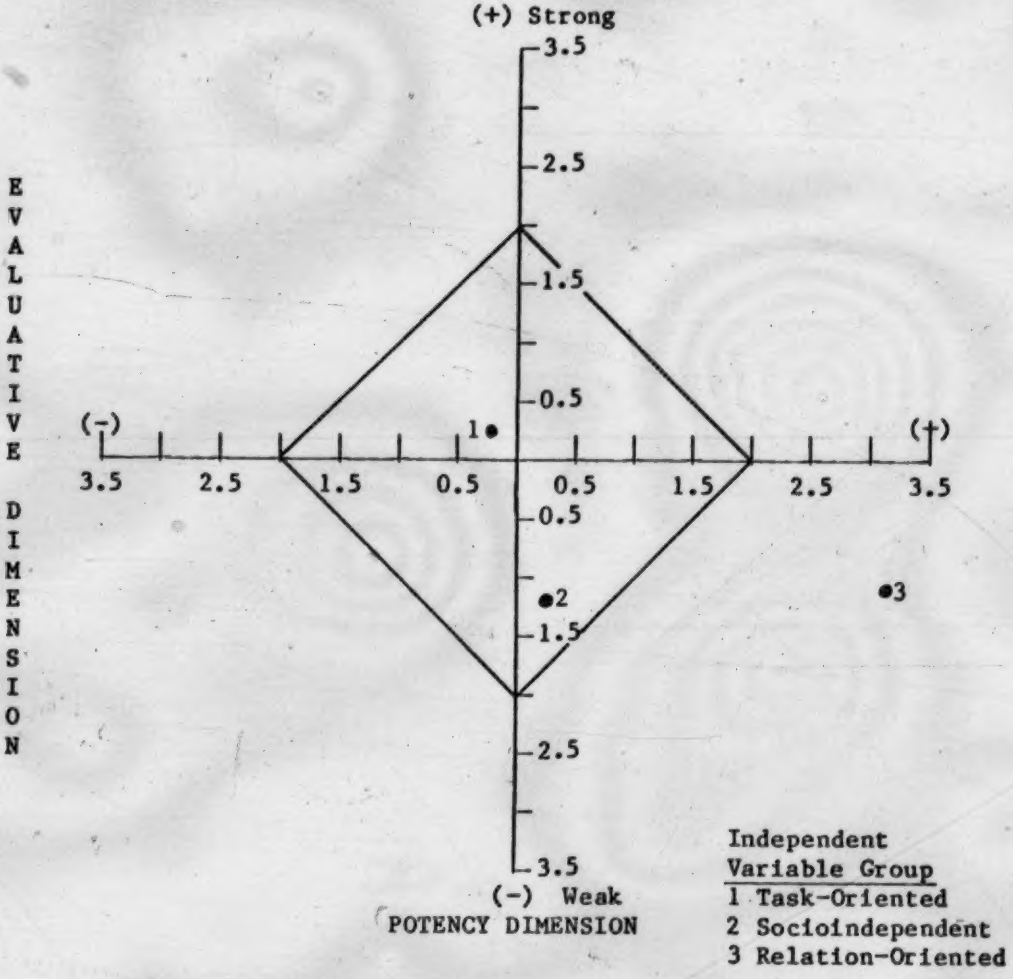


Figure 6.10 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Task-Oriented, Socioindependent and Relationship-Oriented Administrators toward HRA End-Result Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| # | Name | | | | # | Name | | | |
| 1 | Task | 50.0 | 49.77 | -0.23 | 1 | Task | 50.0 | 50.39 | +0.39 |
| 2 | Socio- | 50.0 | 50.21 | +0.21 | 2 | Socio- | 50.0 | 48.80 | -1.20 |
| 3 | Relation | 50.0 | 53.08 | +3.08 | 3 | Relation | 50.0 | 48.83 | -1.17 |

Table 6.12 Comparison of Attitudes and Strength of Attitudes of Task-Oriented, Socioindependent and Relationship-Oriented Administrators Toward HRA End-Result Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean (X) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Task-Oriented | 142 | 49.77 | 8.64 | 1,2 | 0.90 |
| | 2 | Socioindepent. | 142 | 50.21 | 7.80 | 2,3 | 0.01 |
| | 3 | Relationship | 139 | 53.08 | 8.03 | 1,3 | <0.01* |
| | F Ratio = 6.80 | | Probability = <0.01 | | | | |
| POTENCY | 1 | Task-Oriented | 142 | 50.39 | 8.72 | 1,2 | 0.26 |
| | 2 | Socioindepent. | 142 | 48.80 | 6.75 | 2,3 | 0.99 |
| | 3 | Relationship | 139 | 48.83 | 9.13 | 1,3 | 0.28 |
| | F Ratio = 1.72 | | Probability = 0.18 | | | | |

*significant at the <0.01 level.

while the potency scores were +0.30, +1.28 and +0.27 respectively. Table 6.13 disclosed there were no statistically significant differences.

### Complexity and HRA Intervening Variables

Figure 6.12 showed evaluative scores of -0.78, -1.47 and -0.79 and potency scores of -1.31, +0.58 and -0.11 for the low, medium and high complexity groups respectively. Table 6.14 indicated no statistically significant differences.

### Complexity and HRA End-Result Variables

Figure 6.13 revealed a similar pattern by all three groups. The low, medium and high complexity groups had evaluative scores of +1.17,

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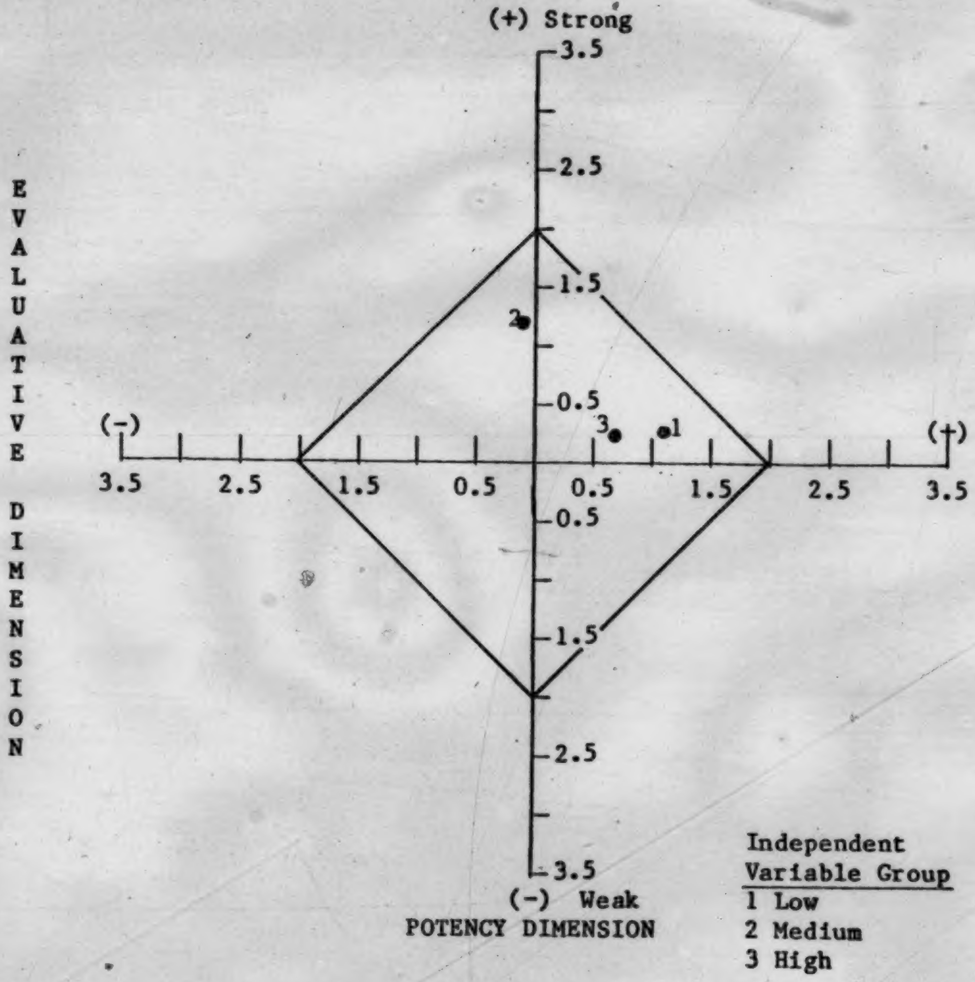

Figure 6.11 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Administrators Who Functioned in Low, Medium and High Complexity Organizations, as Derived Numerically Toward HRA Causal Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\overline{X}$ | Calculated $\overline{X}$ | Semantic Space Plot | # | Name | Std. $\overline{X}$ | Calculated $\overline{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Low | 50.0 | 51.07 | +1.07 | 1 | Low | 50.0 | 50.30 | +0.30 |
| 2 | Medium | 50.0 | 49.93 | -0.07 | 2 | Medium | 50.0 | 51.28 | +1.28 |
| 3 | High | 50.0 | 50.64 | +0.64 | 3 | High | 50.0 | 50.27 | +0.27 |

Table 6.13 Comparison of Attitudes and Strength of Attitudes of Administrators Who Functioned in Low, Medium and High Complexity Organizations, as Derived Numerically Toward HRA Causal Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 132 | 51.07 | 7.90 | 1,2 | 0.51 |
| | 2 | Medium | 136 | 49.93 | 8.36 | 2,3 | 0.77 |
| | 3 | High | 130 | 50.64 | 8.06 | 1,3 | 0.91 |
| | F Ratio = 0.68 | | Probability = 0.51 | | | | |
| POTENCY | 1 | Low | 132 | 50.30 | 7.49 | 1,2 | 0.57 |
| | 2 | Medium | 136 | 51.28 | 7.73 | 2,3 | 0.56 |
| | 3 | High | 130 | 50.27 | 7.66 | 1,3 | 0.99 |
| | F Ratio = 0.76 | | Probability = 0.47 | | | | |

+0.28 and +1.08 and potency scores of -0.59, -0.07 and -0.66 respectively. Table 6.15 indicated there were no statistically significant differences.

## SUB-PROBLEM EIGHT: PERCEIVED COMPLEXITY AND HRA CAUSAL, INTERVENING, AND END-RESULT VARIABLES

Sub-problem eight addressed the question of attitudes and strength of attitudes and significant differences in the attitudes and strength of attitudes toward HRA causal, intervening and end-result variables of respondents who perceived themselves functioning in low, medium or high complexity organizations. Each variable is treated separately in the following sections.

### Perceived Complexity and HRA Causal Variables

Figure 6.14 indicated all three perceived complexity groups had a similarly positive attitude but different strength of attitude. The evaluative scores for the low, medium and high complexity groups were +0.78, +0.51 and +0.39 while the potency scores were +0.61, -0.56 and +3.85 respectively.

Table 6.16 revealed there were no significant differences in the evaluative scores. However, an F-ratio of 4.05 and a probability level of 0.02 of the potency dimension indicated that a significant difference existed between groups. The homogeneity of variance probability of 0.004 divulged the homogeneity assumption was not met in the traditional way nor were the group sizes equal. The medium and high complexity means were significantly different at the 0.02 probability level. The attitude conviction of the respondents who perceived themselves functioning in highly complex organizations was significantly stronger than the potency scores of the respondents who perceived themselves functioning in medium complexity organizations.

### Perceived Complexity and HRA Intervening Variables

Figure 6.15 indicated all three groups had a negative attitude. The low, medium and high complexity groups had evaluative scores of -0.84, -1.03 and -1.28 and potency scores of -0.25, -0.95 and +2.10 respectively. Table 6.17 showed there were no significant differences.

### Perceived Complexity and HRA End-Result Variables

Figure 6.16 showed that all three groups had a relatively different set of attitudes and strength of attitudes. The low, medium and

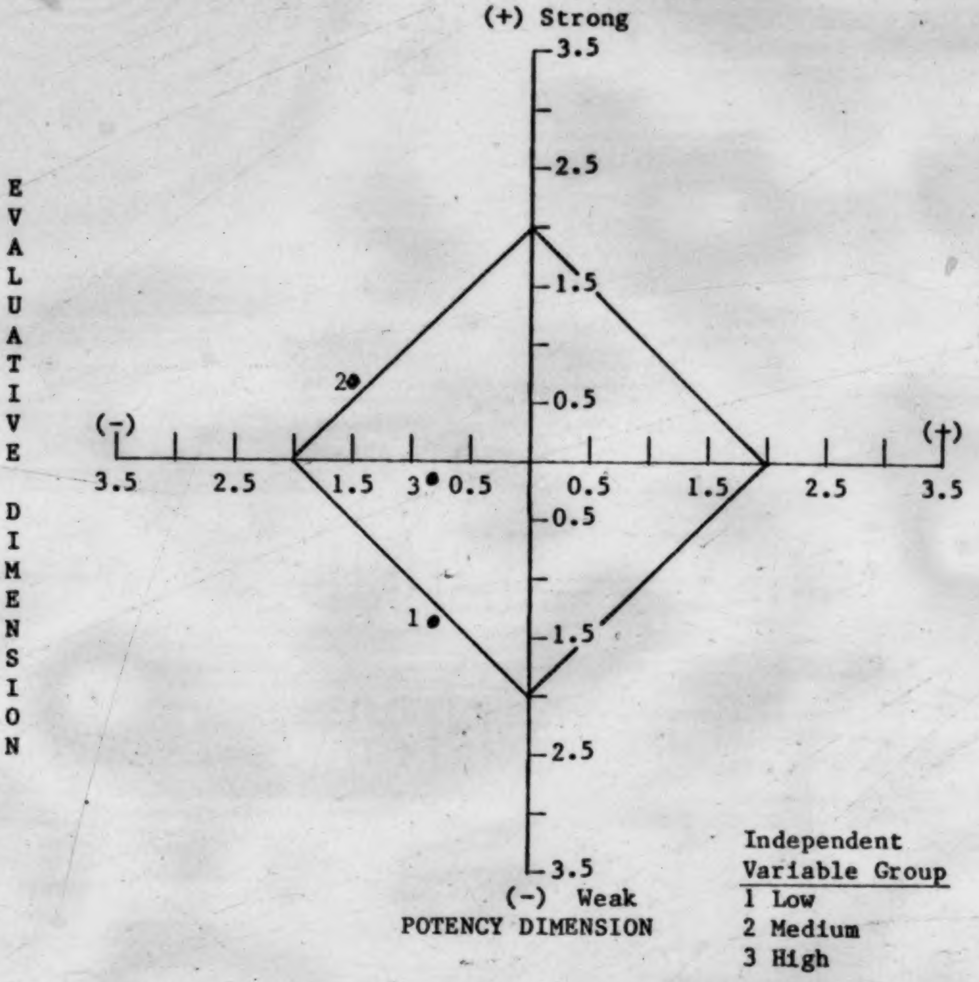

Figure 6.12 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Administrators Who Functioned in Low, Medium and High Complexity Organizations, as Derived Numerically, Toward HRA Intervening Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\overline{X}$ | Calculated $\overline{X}$ | Semantic Space Plot | # | Name | Std. $\overline{X}$ | Calculated $\overline{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Low | 50.0 | 49.22 | -0.78 | 1 | Low | 50.0 | 48.69 | -1.31 |
| 2 | Medium | 50.0 | 48.53 | -1.47 | 2 | Medium | 50.0 | 50.58 | +0.58 |
| 3 | High | 50.0 | 49.21 | -0.79 | 3 | High | 50.0 | 49.89 | -0.11 |

Table 6.14 Comparison of Attitudes and Strength of Attitudes of Administrators who Functioned in Low, Medium and High Complexity Organizations, as Derived Numerically, Toward HRA Intervening Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean (X) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 132 | 49.22 | 9.04 | 1,2 | 0.80 |
| | 2 | Medium | 136 | 48.53 | 7.93 | 2,3 | 0.80 |
| | 3 | High | 130 | 49.21 | 8.33 | 1,3 | 1.00 |
| | F Ratio = 0.29 | | Probability = 0.75 | | | | |
| POTENCY | 1 | Low | 132 | 48.69 | 6.61 | 1,2 | 0.08 |
| | 2 | Medium | 136 | 50.58 | 7.22 | 2,3 | 0.72 |
| | 3 | High | 130 | 49.89 | 6.97 | 1,3 | 0.37 |
| | F Ratio = 2.54 | | Probability = 0.08 | | | | |

high complexity groups had evaluative scores of +1.30, +1.02, and -0.75 and potency scores of -0.96, -0.85 and +2.23 respectively. Table 6.18 revealed there were no statistically significant differences.

## SUMMARY

The first section of this Chapter presented the study proper data factor matching results. The second section described the data conversion and statistical treatment of the HRA data. The next eight sections provided the data analysis and research findings associated with the eight sub-problems. Statistically significant differences were found for six of the sixteen sets of comparisions made. Within these six sets, there were nine significantly different between-group means (out of a possible thirty six) which were:

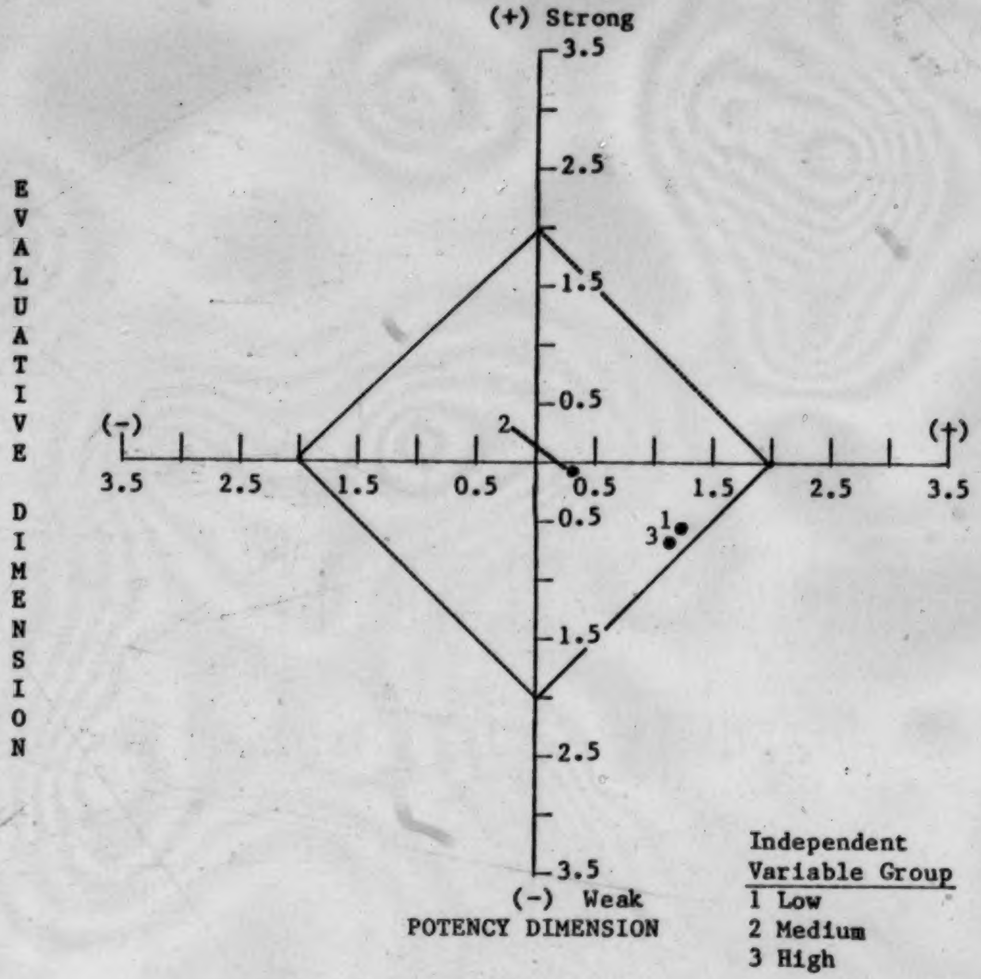

Figure 6.13 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Administrators who Functioned in Low, Medium and Highly Complex Organizations, as Derived Numerically, Toward HRA End-Result Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | | | | | | | | |
| # | Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | # | Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| 1 | Low | 50.0 | 51.17 | +1.17 | 1 | Low | 50.0 | 49.41 | -0.59 |
| 2 | Medium | 50.0 | 50.28 | +0.28 | 2 | Medium | 50.0 | 49.93 | -0.07 |
| 3 | High | 50.0 | 51.08 | +1.08 | 3 | High | 50.0 | 49.34 | -0.66 |

Table 6.15 Comparison of Attitudes and Strength of Attitudes of Administrators who Functioned in Low, Medium and High Complexity Organizations, as Derived Numerically, Toward HRA End-Result Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 132 | 51.17 | 8.56 | 1,2 | 0.68 |
| | 2 | Medium | 136 | 50.28 | 8.40 | 2,3 | 0.73 |
| | 3 | High | 130 | 51.08 | 8.04 | 1,3 | 0.99 |
| | F Ratio = 0.46 | | Probability = 0.63 | | | | |
| POTENCY | 1 | Low | 132 | 49.41 | 8.69 | 1,2 | 0.87 |
| | 2 | Medium | 136 | 49.93 | 8.46 | 2,3 | 0.45 |
| | 3 | High | 130 | 49.34 | 7.83 | 1,3 | 0.75 |
| | F Ratio = 0.81 | | Probability = 0.45 | | | | |

Table 6.16 Comparison of Attitudes and Strength of Attitudes of Administrators Who Perceived Themselves Functioning in Low, Medium and High Complexity Organizations Toward HRA Causal Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 297 | 50.78 | 7.65 | 1,2 | 0.96 |
| | 2 | Medium | 85 | 50.51 | 8.57 | 2,3 | 0.99 |
| | 3 | High | 35 | 50.39 | 7.97 | 1,3 | 0.99 |
| | F Ratio = 0.06 | | Probability = 0.94 | | | | |
| POTENCY | 1 | Low | 297 | 50.61 | 7.09 | 1,2 | 0.47 |
| | 2 | Medium | 85 | 49.44 | 9.03 | 2,3 | 0.02* |
| | 3 | High | 35 | 53.85 | 9.21 | 1,3 | 0.06 |
| | F Ratio = 4.05 | | Probability = 0.02 | | | | |

*Significant at the 0.02 level; homogeneity assumption not met.

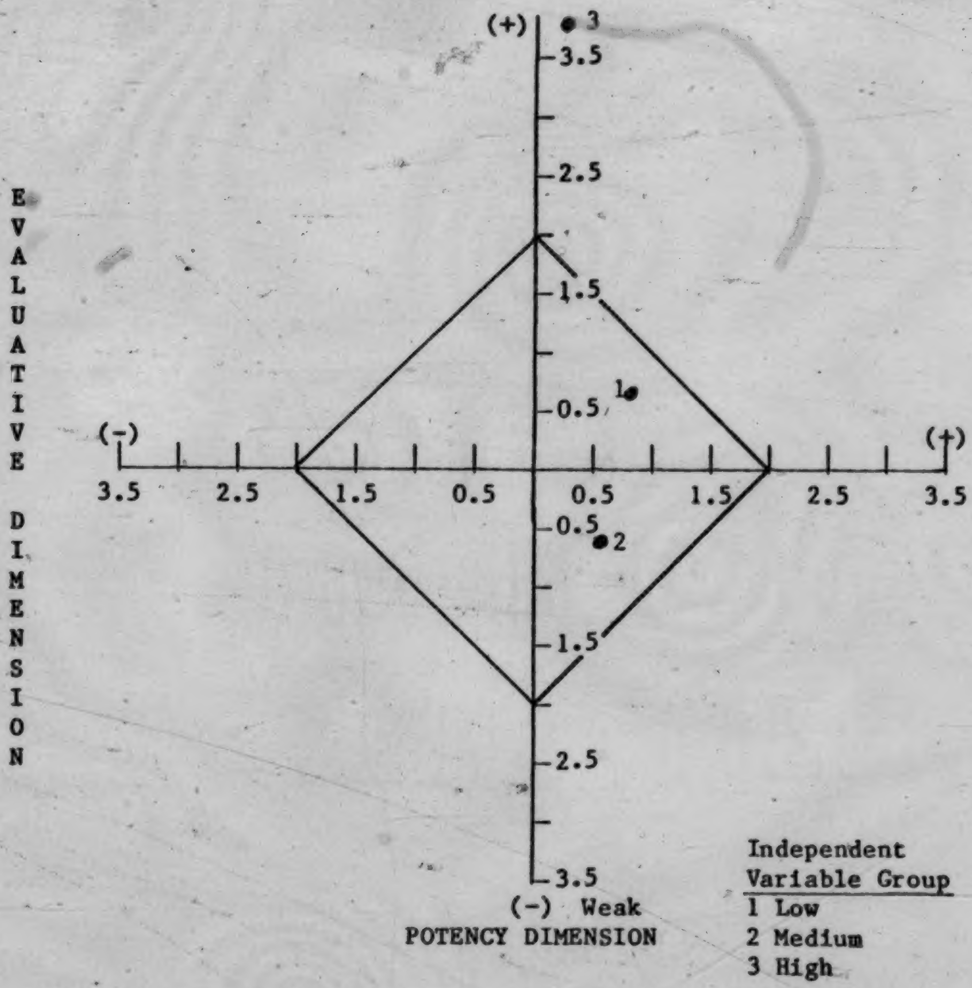

Figure 6.14 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Administrators Who Perceived Themselves Functioning in Organizations of Low, Medium and High Complexity Organizations Toward HRA Causal Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group # | Group Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | # | Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| 1 | Low | 50.0 | 50.78 | +0.78 | 1 | Low | 50.0 | 50.61 | +0.61 |
| 2 | Medium | 50.0 | 50.51 | +0.51 | 2 | Medium | 50.0 | 49.44 | -0.56 |
| 3 | High | 50.0 | 50.39 | +0.39 | 3 | High | 50.0 | 53.85 | +3.85 |

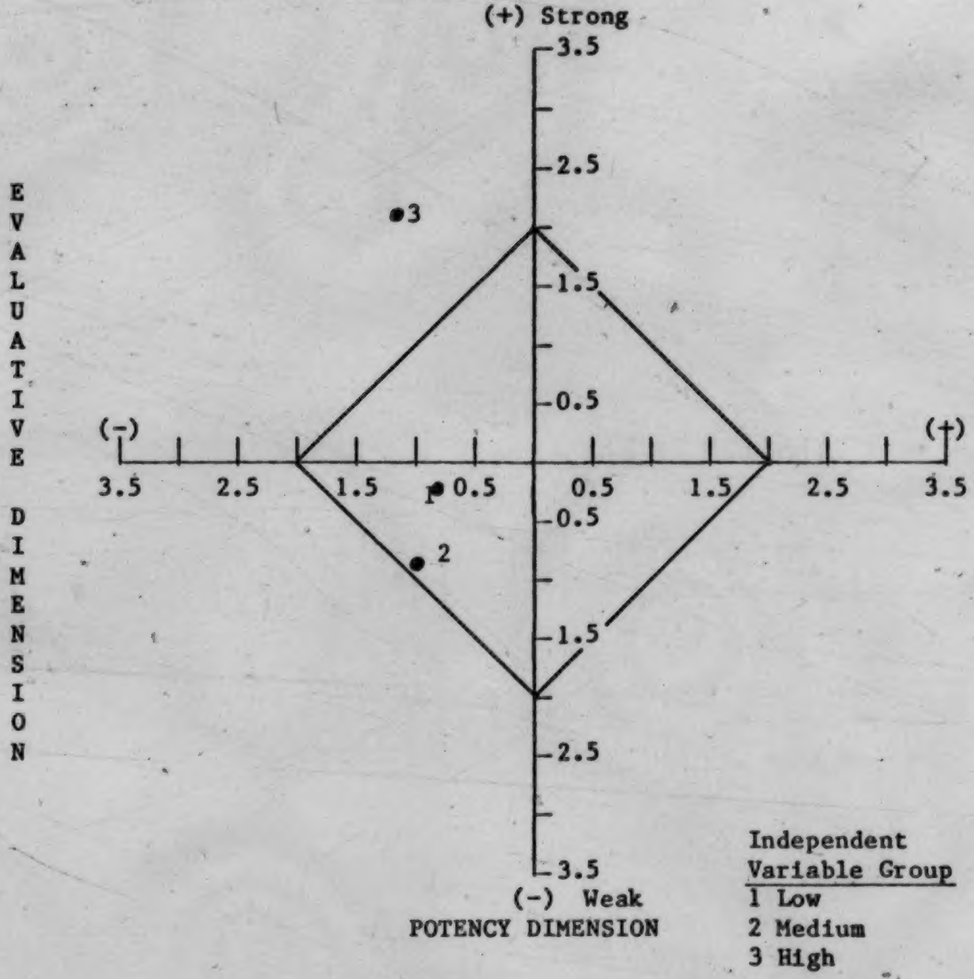

Figure 6.15 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Administrators Who Perceived Themselves Functioning in Organizations of Low, Medium and High Complexity Toward HRA Intervening Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | # | Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Low | 50.0 | 49.16 | -0.84 | 1 | Low | 50.0 | 49.75 | -0.25 |
| 2 | Medium | 50.0 | 48.97 | -1.03 | 2 | Medium | 50.0 | 49.05 | -0.95 |
| 3 | High | 50.0 | 48.72 | -1.28 | 3 | High | 50.0 | 52.10 | +2.10 |

Table 6.17 Comparison of Attitudes and Strength of Attitudes of Administrators who Perceived Themselves Functioning in Low, Medium and High Complexity Organizations Toward HRA Intervening Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 297 | 49.16 | 8.52 | 1,2 | 0.98 |
| | 2 | Medium | 85 | 48.97 | 8.39 | 2,3 | 0.99 |
| | 3 | High | 35 | 48.72 | 7.80 | 1,3 | 0.96 |
| | F Ratio = 0.05 | | Probability = 0.95 | | | | |
| POTENCY | 1 | Low | 297 | 49.75 | 6.75 | 1,2 | 0.75 |
| | 2 | Medium | 85 | 49.09 | 7.46 | 2,3 | 0.10 |
| | 3 | High | 35 | 52.10 | 8.81 | 1,3 | 0.18 |
| | F Ratio = 2.28 | | Probability = 0.10 | | | | |

Table 6.18 Comparison of Attitudes and Strength of Attitudes of Administrators Who Perceived Themselves Functioning in Low, Medium and High Complexity Organizations Toward HRA End-Result Variables: Summary of Analysis of Variance Between Means.

| DIM | Group | | Frequency (N) | Mean ($\bar{X}$) | Standard Deviation | Pairs of Groups | Probability |
|---|---|---|---|---|---|---|---|
| | # | Name | | | | | |
| EVAL | 1 | Low | 297 | 51.30 | 8.39 | 1,2 | 0.96 |
| | 2 | Medium | 85 | 51.02 | 8.00 | 2,3 | 0.57 |
| | 3 | High | 35 | 49.25 | 8.05 | 1,3 | 0.38 |
| | F Ratio = 0.96 | | Probability = 0.38 | | | | |
| POTENCY | 1 | Low | 297 | 49.04 | 8.07 | 1,2 | 0.99 |
| | 2 | Medium | 85 | 49.15 | 7.87 | 2,3 | 0.18 |
| | 3 | High | 35 | 52.23 | 10.73 | 1,3 | 0.09 |
| | F Ratio = 2.35 | | Probability = 0.09 | | | | |

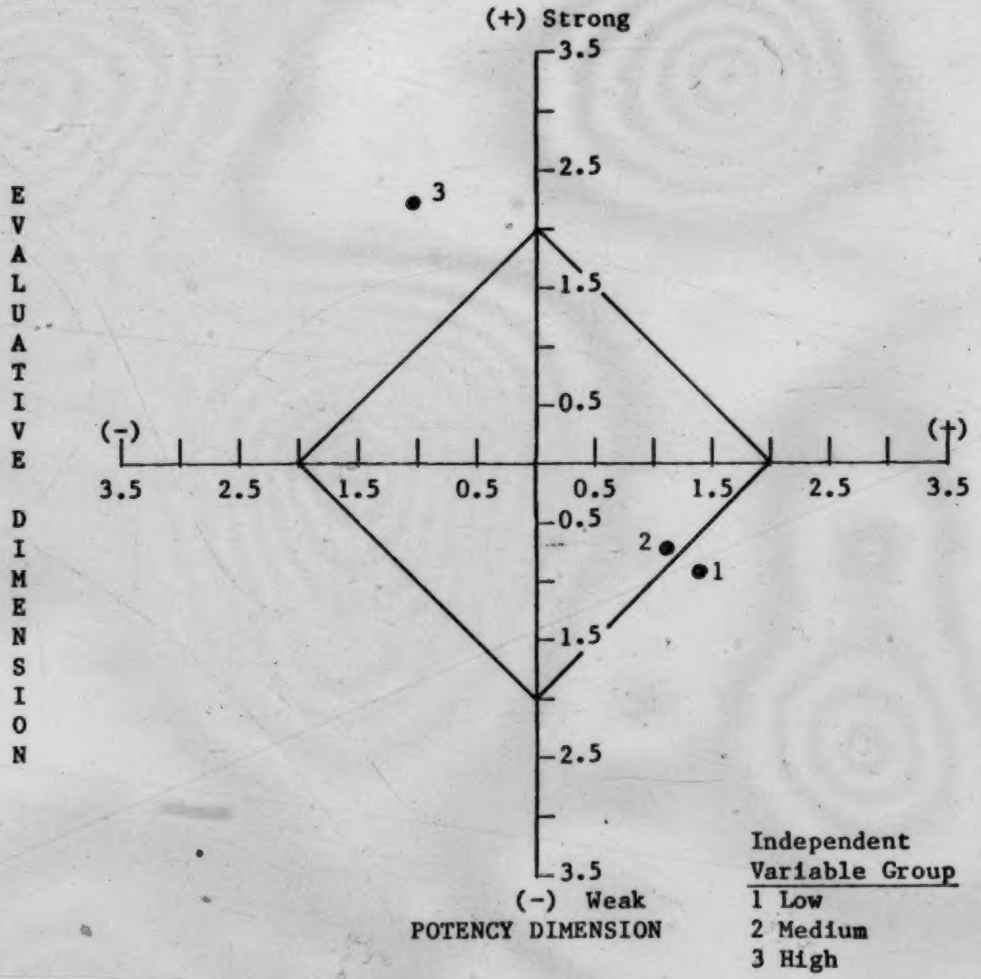

Figure 6.16 Semantic Space Coordinates of Attitudes and Strength of Attitudes of Administrators Who Perceived Themselves Functioning in Low, Medium and High Complexity Organizations Toward HRA End-Result Variables.

**Calculation of Semantic Space Plottings**

| Evaluative Dimension | | | | | Potency Dimension | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group | | Std. $\bar{X}$ | Calculated $\bar{X}$ | Semantic Space Plot | # | Name | Std. $\bar{X}$ | Calculated $\bar{X}$ | Seman. Space Plot |
| # | Name | | | | | | | | |
| 1 | Low | 50.0 | 51.30 | +1.30 | 1 | Low | 50.0 | 49.04 | -0.96 |
| 2 | Medium | 50.0 | 51.02 | +1.02 | 2 | Medium | 50.0 | 49.15 | -0.85 |
| 3 | High | 50.0 | 49.25 | -0.75 | 3 | High | 50.0 | 52.23 | +2.23 |

## SUMMARY (Cont'd)

1. Relationship-oriented administrators had significantly more positive attitudes toward HRA and the HRA intervening and end-result variables than did the socioindependent and task-oriented administrators.
2. Relationship-oriented administrators had significantly more positive attitudes toward the HRA causal variables type of information than did the task-oriented administrators.
3. Administrators who perceived themselves functioning in highly complex organizations had significantly stronger convictions of their slightly negative attitude toward HRA than did respondents who perceived themselves functioning in organizations of medium complexity.
4. Administrators who perceived themselves functioning in highly complex organizations had significantly stronger convictions of their slightly positive attitude toward the HRA causal variables than did respondents who functioned in medium complexity organizations.

# CHAPTER VII

# PROBABLE BEHAVIOR PATTERNS TOWARD HRA

The power of the SD is not only in measuring attitudes and strength of attitudes, but also in its ability to accurately predict behavior (Osgood, et. al., 1958:198-9; Warr and Knapper, 1968:90-93). Section one provides the HRA-related behavioral propositions and describes the eight likely behavioral zones used in inferring the probable behavior toward the assumed implementation of HRA and the three variables. The next eight sections report on the probable behavior patterns of each significantly different group in terms of the eight sub-problems while the tenth section compares the behavior patterns of all sixteen independent study variable groups.

## PREDICTING PROBABLE BEHAVIOR TOWARD ASSUMED HRA IMPLEMENTATION

By analyzing the quality (direction) and intensity (distance) of meaning of the evaluative and potency factors in semantic space, it is possible to infer the probable behavior of study respondents toward HRA. Figure 7.1 illustrates the eight probable behavior zones in semantic space along with directionality of the four propositions. The likely behavior associated with each of the eight zones is summarized in Figure 7.2. The four behavioral propositions (the corollaries apply equally well) which give behavior directionality in the eight zones are:

1. The more positive the attitude and the stronger the

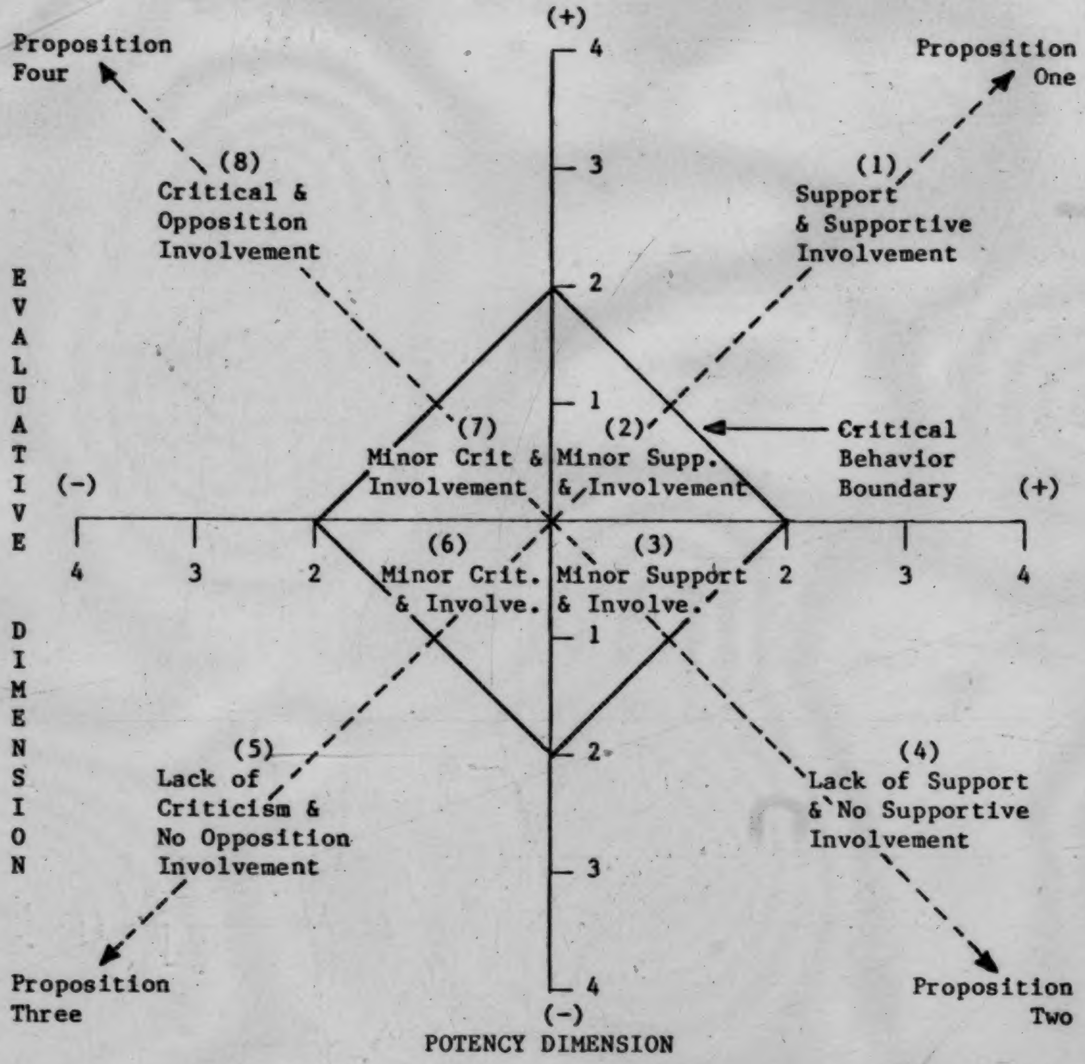
(+)
4
3
2
1
1
2
3
4
(-)
(-)
(+)
4
3
2
2
3
4
Proposition Four
Proposition One
Proposition Three
Proposition Two
(8) Critical & Opposition Involvement
(1) Support & Supportive Involvement
(7) Minor Crit & Involvement
(2) Minor Supp. & Involvement
Critical Behavior Boundary
(6) Minor Crit. & Involve.
(3) Minor Support & Involve.
(5) Lack of Criticism & No Opposition Involvement
(4) Lack of Support & No Supportive Involvement
EVALUATIVE DIMENSION
POTENCY DIMENSION

Figure 7.1 Relationship Between the Evaluative and Potency Semantic Space Coordinates, Four Behavioral Propositions and Eight Probable Behavior Pattern Zones

conviction, the more predisposed is that respondent(s) to be supportive of HRA.

2. The more favorable the attitude and the weaker the conviction, the more predisposed is that respondent(s) to not be supportive nor opposed to HRA.

3. The more negative the attitude and the weaker the conviction,

| Probable Behavior Pattern Zone | Key Probable Behaviors Predisposition | | | |
|---|---|---|---|---|
| | Proponent/Opponent Action | Level of Involvement | Leadership | Attitude Change Possibility |
| 1 | Moderate to Extreme visible support (advocate) | Personal, direct and intense involvement | Yes | Very Difficult |
| 2 | Minor to considerable support (proponent) | Minimal to considerable involvement | No | Moderately to quite difficult |
| 3 | Minor to no support (proponent) | No direct involvement | No | Moderately to quite easy |
| 4 | Lack of Support (neutral) | No | No | Quite easy |
| 5 | Lack of Criticism (neutral) | No opposition involvement | No | Quite easy |
| 6 | Minor to no criticism (opponent) | No direct opposition involvement | No | Moderately to quite easy |
| 7 | Minor to considerable criticism (opponent) | Minimal to considerable involvement | No | Moderate to quite difficult |
| 8 | Moderate to extreme visible criticism (opponent) | Personal, direct and intense involvement | Yes | Very difficult |

Figure 7.2 Summary of Key Probable Behavior Predispositions of the Eight Behavior Pattern Zones

the more likely is that respondent(s) to not be opposed nor to support HRA.

4. The more negative the attitude and the stronger the conviction, the more predisposed is that respondent(s) to be opposed to HRA.

To provide additional assistance in comparing responses in sub-problems 5, 6, 7 and 8, the semantic space coordinates for the evaluative and potency dimensions were converted into the following numeric values:

| Semantic Space Plot Range | Semantic Space Converted Numeric Values |
|---|---|
| +3.00 or more | +4 |
| +2.00 to +2.99 | +3 |
| +1.00 to +1.99 | +2 |
| +0.01 to +0.99 | +1 |
| -0.01 to -0.99 | -1 |
| -1.00 to -1.99 | -2 |
| -2.00 to -2.99 | -3 |
| -3.00 or more | -4 |

The predicted behavioral patterns in the following eight sections relate to the semantic space coordinates demonstrated in the appropriate figures in each sub-problem section of Chapter VI (Appendix L provides a graphic summary of the probable behavior patterns).

## SUB-PROBLEM ONE: ADMINISTRATIVE POSITION AND HRA

Probable behavior patterns could not be inferred since there were no statistically significant differences in the evaluative and potency dimensions.

## SUB-PROBLEM TWO: LEADERSHIP STYLE AND HRA

The attitudes of the relationship-oriented group differed significantly from the attitudes of the other two leadership groups. The task-oriented administrators (zone 7) would likely be opponents who would probably engage in minimal criticism and could get minimally involved in opposition-type activities; their moderately negative attitude would be quite difficult to change. The socioindependent study respondents (zone

6) would likely be opponents who would engage in minor to no criticism and would provide no direct opposition; the slightly negative attitude would be moderately to quite easy to change. The relationship-oriented administrators (zone 3) would likely be proponents who would provide at least minor support but would not provide any supportive-type leadership. Finally, the considerably positive attitude of the relationship-oriented administrators would be moderately to quite easy to change.

## SUB-PROBLEM THREE: NUMERIC COMPLEXITY AND HRA

Probable behavior predictions toward HRA could not be made since there were no statistically significant differences.

## SUB-PROBLEM FOUR: PERCEIVED COMPLEXITY AND HRA

The potency dimension of the high complexity respondents was significantly different from the medium complexity group. The attitude of the high complexity group was negative (-0.61) while the intensity was extremely strong (+2.71). This suggests that not only would this group be extremely opposed to any attempt to implement HRA (behavior zone 8) but more importantly, they would probably get personally, intensely and directly involved in opposition-type activities. In addition, this group would assume a strong opposition leadership role and it would be difficult to change the negative attitude. The low complexity group was not significantly different. The medium complexity group (behavior zone 6) had a minimally negative attitude (-0.06) and a slightly weak (-0.78) conviction of the attitude; hence the group would likely engage in minor to no opposition and would probably not directly work against the implementation. This group would not assume any leadership role. As well, their attitude would be moderately to quite easy to change.

## SUB-PROBLEM FIVE: ADMINISTRATIVE POSITION AND HRA CAUSAL, INTERVENING AND END-RESULT VARIABLES

Probable behavior predictions could not be inferred since there were no statistically significant differences.

## SUB-PROBLEM SIX: LEADERSHIP STYLE AND HRA CAUSAL, INTERVENING AND END-RESULT VARIABLES

### Leadership Style and HRA Causal Variables

The relationship-oriented administrators (behavior zone 1) would be highly supportive of the implementation of an HRA causal variable type of information system (evaluative score of +2.06) and as well could be depended upon to take at least a partially active role in implementation and support (potency plot of +0.21). On the other hand, the task-oriented administrators (behavior zone 7) would likely be partially opposed (-0.35 potency score) and could become moderately involved in any opposition-type activity. The attitudes and strength of attitudes of the socioindependent group did not differ significantly. Finally, the attitude of the relationship-oriented group would be very difficult to change while the attitude of the task-oriented group would be moderately to quite difficult to change.

### Leadership Style and HRA Intervening Variables

The relationship-oriented administrators (behavior zone 2) would likely be moderately accepting and supportive (+0.97) but they would probably not assume any strong leadership role; however, they would also not work against implementation. The other two groups have a significantly different attitude in the negative direction. While the socioindependents (behavior zone 5) could slightly be opposed to the implementation, they would very likely not get involved in any opposition activity. The slightly positive attitude of the relationship-oriented group would be moderately to quite difficult to change while the moderately negative attitude of the socioindependent group would be quite easy to change. The task-oriented administrators (behavior zone 8), however, would be very negative and intensely opposed to any proposed implementation. As well, the task-oriented administrators would probably get personally involved and assume opposition-type leadership. Further, the negative attitude of the task-oriented administrators could be very difficult to change.

### Leadership Style and HRA End-Result Variables

The attitudes of the relationship-oriented administrators differed significantly from the other two groups. Although the relationship-oriented administrators (behavior zone 4) would likely provide little or no support, they would probably not get actively involved in the implementation. If the implementation encountered any difficulty, this group could withdraw support quite readily. Further, their attitude would be quite easy to change. On the other hand, the task-oriented group (behavior zone 7) could demonstrate slight opposition to the implementation and might get minimally involved in opposition activities. As well, this group would not assume any leadership activities. The socioindependent group (behavior zone 3) could provide partial to no support but could quickly withdraw support should the implementation experience any difficulties because of the moderately weak potency score. Further, this group would likely not get involved in any opposition-type activities. Finally, the slightly negative attitude of the task-oriented group could be moderately to quite easy to change.

### Leadership Style, HRA Concept and the Three HRA Variables

This section compares the inferred probable behavior of the three leadership style groups toward HRA and the three HRA variables. A review of Figure 7.3 suggests several interesting attitude and strength of attitude patterns among the groups:

1. Task-oriented administrators had the most consistent attitudes and strength of attitudes patterns toward the HRA concept and the three HRA variables; the attitudes were always negative (ranging from -0.23 to -2.24) while the strength of attitudes were always somewhat to moderately strong (ranging from +0.30 to +1.57). The semantic space coordinates all fell into the upper-left quadrant.
2. The most inconsistent pattern was displayed by the socioindependent group. Their attitudes were positive with respect to the HRA end-result (+0.21) variables while their attitudes were negative in terms of the HRA concept (-0.61) and the HRA intervening variables (-1.54) type of information.
3. The conviction level of the attitudes of the socioindependent administrators toward the HRA concept was partially weak (-0.65) and the HRA intervening and end-result variables moderately weak (-1.08 and -1.20, respectively).

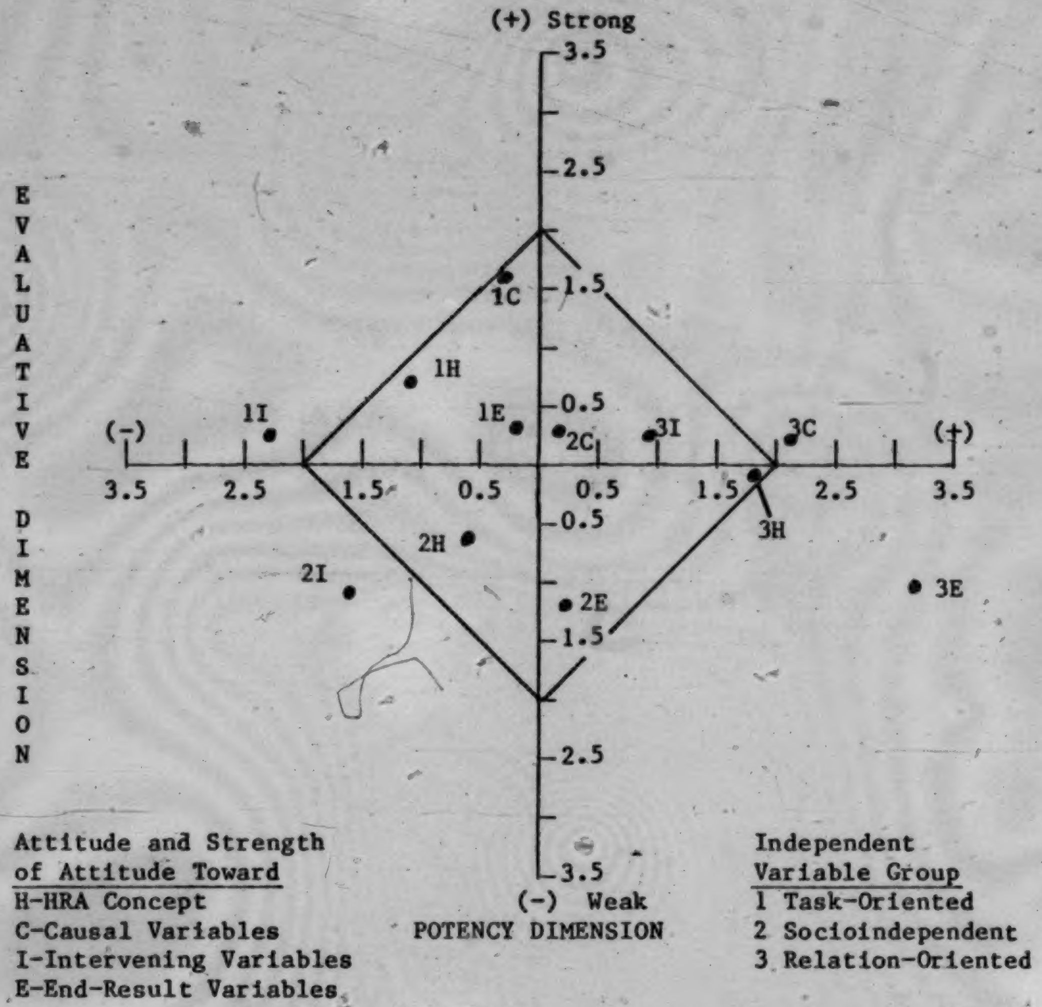

Figure 7.3 Comparison of Attitudes and Strength of Attitudes of Leadership Style Groups Toward the HRA Concept and HRA Causal, Intervening and End-Result Variables.

4. The relationship-oriented administrators demonstrated an in-between consistency-inconsistency pattern. In terms of their attitudes, the relationship-oriented administrators had a positive attitude (ranging from +0.97 to +3.08). However, their conviction levels differed; the conviction toward the HRA causal and intervening types of information was slightly strong (+0.21 and +0.20 respectively) while the intensity of

their attitudes toward the HRA end-result variables type of information was moderately weak (-1.17) and the HRA concept only slightly weak (-0.11).

Table 7.1 shows the converted numeric values of the semantic space coordinates of Figure 7.3. By analyzing Figure 7.3 and Table 7.1, the following inferred probable behavioral comparisons can be made:

1. No group had a high positive attitude combined with a strong attitude conviction level (behavior zone 1).
2. Although the socioindependent administrators would likely not support the implementation of the HRA concept and HRA intervening variables they would nevertheless probably not get involved in any opposition type activities.
3. Although the task-oriented administrators would partially support the implementation of the HRA end-result variables, they would likely assume no active support role and hence should not be depended upon to provide any direct assistance.
4. The task-oriented administrators could be expected to actively work against the assumed implementation of the HRA concept and the HRA causal and intervening variables type of information system. The task-oriented administrators, on the other hand, would likely be heavily involved in opposition activities and could assume opposition leadership, particularly with respect to the assumed implementation of HRA.
5. The relationship-oriented administrators could provide a limited support role in the implementation of the HRA intervening variables type of information but would likely withdraw any support in the event of problems.

Table 7.1 Comparison of Converted Evaluative and Potency Dimensions Semantic Space Coordinates of Task-Oriented, Socioindependent and Relationship-Oriented Administrators Toward HRA and HRA Variables.

| Leadership Style | Types of Information | | | |
|---|---|---|---|---|
| | HRA Concept | HRA Causal | HRA Intervening | HRA End-Results |
| Task-Oriented | -2,+1*(7)** | -1, +2 (7) | -3, +1 (8) | -1, -1 (7) |
| Socioindependent | -1, -1 (6) | *** | -2, -2 (5) | +1, -2 (3) |
| Relation-Oriented | +2, -1 (3) | +3, +1 (1) | +1, +1 (2) | +4, -2 (4) |

* the first number represents the evaluative semantic space converted numeric value while the second number represents the potency semantic space converted numeric value.

** denotes the probable behavior pattern zone.

*** no significant difference

6. The socioindependent administrators could show support for the implementation of the HRA end-result variables type of information system but would probably not get involved directly nor indirectly; support would likely be withdrawn very quickly if any problems were encountered since the commitment is very weak. The same behavior pattern would likely be demonstrated by the relationship-oriented administrators toward the HRA concept.
7. Although the relationship-oriented administrator group had an extremely positive attitude toward the HRA end-result variable, they would not take any active support role because of their very weak positive attitude.
8. The strongest support and direct involvement would come from the relationship-oriented administrators toward the HRA causal variables type of information (behavior zone 1) since the attitude was considerably positive and there was some strength in the conviction.

## SUB-PROBLEM SEVEN: NUMERICALLY DERIVED COMPLEXITY AND HRA CAUSAL INTERVENING AND END-RESULT VARIABLES

Probable behavior predictions were not inferred since there were no statistically significant differences.

## SUB-PROBLEM EIGHT: PERCEIVED COMPLEXITY AND HRA CAUSAL, INTERVENING, AND END-RESULT VARIABLES

### Perceived Complexity and HRA Causal Variables

The medium complexity group (zone 3) would likely provide minor to no support, would not get directly involved and would assume no supportive leadership role. Their minimally positive attitude could be changed but with moderate difficulty. The high complexity group (zone 1) would likely not only provide extreme support as advocates, but would very probably take a very personal and direct role in assisting the implementation. This group could assume a strong supportive leadership role. It is very unlikely that their positive attitude could be changed to a negative attitude. The attitude and strength of attitude of the low complexity group did not differ significantly.

### Perceived Complexity and HRA Intervening and End-Result Variables

Probable behavior predictions were not inferred since there were no statistically significant differences.

### Perceived Complexity, HRA Concept and the Three HRA Variables

This section compares the probable behavior patterns of the self-perceived low, medium and high complexity groups toward the assumed implementation of the HRA concept in general and the HRA causal variables type of information. Figure 7.4 suggests several noteworthy attitude and strength of attitude patterns.

1. No one group had a consistent attitude and strength of attitude pattern.
2. The high complexity group had a consistent and similarly strong intensity of attitude.
3. The medium complexity group had a consistent and similarily weak intensity of attitude.
4. The low complexity group had a consistently positive attitude while the high complexity group had a consistently negative attitude.
5. Only two of the six groupings had positive attitudes combined with some strength.

Table 7.2 displays the converted numeric values of the semantic space coordinates of Figure 7.4. By analyzing Figure 7.4 and Table 7.2, the following inferred probable behavioral comparisons can be made:

1. The high complexity group would likely be predisposed to moderately support the assumed implementation of the HRA causal variables and to be very highly involved in support-related activities. This group could be expected to assume a self-motivated supporting leadership role. Further, this group would likely retain the positive attitude no matter how severe the problems, difficulties or pressure.
2. The low complexity group would likely be proponents of the assumed implementation of the HRA causal variables and their level of involvement in support-type activities would likely also be minor. The group would probably not take on a

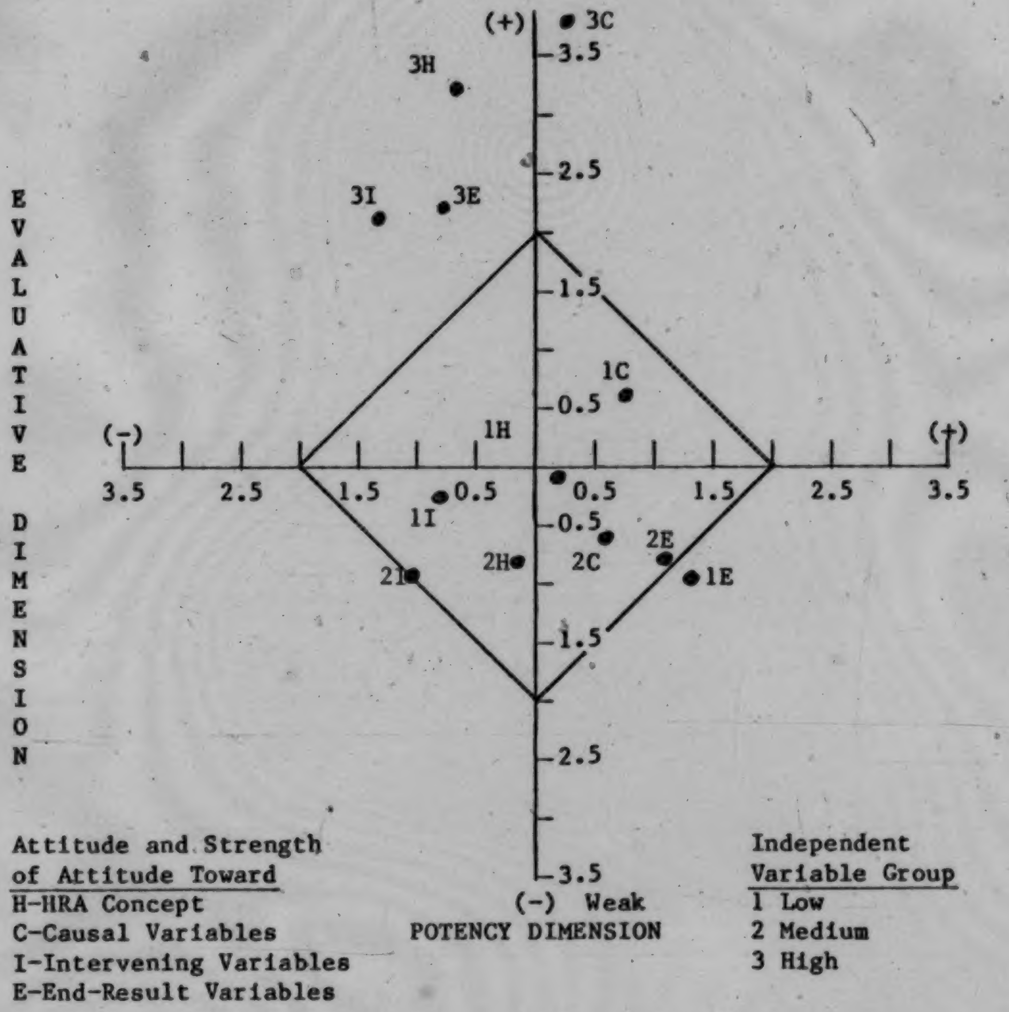

Figure 7.4 Comparison of Attitudes and Strength of Attitudes of Administrators Who Perceived Themselves Functioning in Low, Medium and High Complexity Educational Organizations Toward the HRA Concept and HRA Variables.

leadership role. Although they would likely not withdraw support, they might take on a more neutral position should severe pressure be exerted. It would be unlikely that their positive attitude could be changed to a negative attitude.

3. The low complexity group would probably support the implementation of the HRA concept in a very minor way. This group would probably not take on any leadership role. As

Table 7.2 Comparison of Converted Evaluative and Potency Dimensions Semantic Space Coordinates of Administrators Who Perceived Themselves Functioning in Low, Medium and High Complexity Organizations Toward HRA and the HRA Variables.

| Perceived Organizational Complexity Groups | Types of Information | | | |
|---|---|---|---|---|
| | HRA Concept | HRA Causal | HRA Intervening | HRA End-Results |
| Low | +1,-1*(3)** | +1, +1 (2) | *** | *** |
| Medium | -1, -1 (6) | +1, -1 (3) | *** | *** |
| High | -1, +3 (8) | +1, +4 (1) | *** | *** |

* the first number represents the evaluative semantic space converted numeric value while the second number represents the potency semantic space converted numeric value.
** denotes the probable behavior pattern zone.
*** no significant difference.

well, they would likely withdraw support when difficulties arose. Finally, it would be possible to change their slightly positive attitude to either a negative or more positive attitude. The medium complexity group would have the same predispositions toward the HRA causal variables.

4. The high complexity group would probably be at least moderately critical of HRA in general and would likely tend to be heavily involved in opposition activities (zone 8). They would probably assume a strong opposition leadership role. It would be very unlikely that their attitude could be changed.

## COMPARISON OF ATTITUDES AND STRENGTH OF ATTITUDES OF THE 16 INDEPENDENT VARIABLE STUDY GROUPS

This section compares the attitudes and strength of attitudes of not only the significantly different groups but rather of all sixteen independent variable study groups. The normal semantic space figures were not used because 48 coordinates would make the figure unreadable. Hence, Table 7.3 summarizes the 48 coordinates in a tabular fashion. Some of the conclusions that can be inferred from an examination of Table 7.3 are:

1. The strongest positive attitude (zones 1 and 2) of the groups was toward the HRA causal variable type of information (9 out of 13 or 69.2%).
2. The strongest negative attitude of the groups was toward the HRA intervening (zones 7 and 8) variables type of information (4 out of 10 or 40%).
3. The secretary-treasurers had the strongest positive attitudes and hence would be the most supportive group.
4. The task-oriented administrators had the most negative attitude accompanied by some conviction of the negative attitude and hence they would be the strongest opponents.
5. The greatest variability (spread) in attitude and strength of attitude was expressed by the administrators who functioned in highly complex (self perception) organizations.
6. The greatest frequency of attitudes and strength of attitudes was in probable behavior zone 3 (13 out 48 or 27.0%) while the lowest frequency was in zone 5 (2 out of 48 or 4.2%).
7. The most disperse attitudes and strength of attitudes was toward HRA and the HRA intervening variable.
8. The most bi-polar or opposite attitudes and strength of attitudes was toward the HRA causal variable.

By reviewing the above conclusions and Table 7.3, seven implications can be drawn with regard to support, criticism and success of the assumed implementation of HRA and/or the three HRA variables:

Table 7.3 Comparison of 16 Independent Variable Groups by Behavior Zones and by HRA and Three HRA Variables.

| Independent Variable Group | Distribution of combined Semantic Space Coordinates of HRA and the Three Variables by Probable Behavior Zone. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | TOTAL |
| Adm Position | | | | | | | | | |
| Principal | 0 | 1(C) | 1(E) | 0 | 0 | 2(H,I) | 0 | 0 | 4 |
| Supt. | 1(C) | 1(H) | 1(E) | 0 | 0 | 0 | 1(I) | 0 | 4 |
| Sec.-Treas. | 2(H,C) | 0 | 1(I) | 1(E) | 0 | 0 | 0 | 0 | 4 |
| SUB-TOTAL | 3 | 2 | 3 | 1 | 0 | 2 | 1 | 0 | 12 |
| Leadership Style | | | | | | | | | |
| Task-Oriented | 0 | 0 | 0 | 0 | 0 | 0 | 3(H,C,E) | 1(I) | 4 |
| Socioindependent | 0 | 1(C) | 1(E) | 0 | 1(I) | 1(H) | 0 | 0 | 4 |
| Rel.-Oriented | 1(C) | 1(I) | 1(H) | 1(E) | 0 | 0 | 0 | 0 | 4 |
| SUB-TOTAL | 0 | 3 | 5 | 0 | 1 | 1 | 1 | 1 | 12 |
| Complexity (Numeric) | | | | | | | | | |
| Low | 0 | 1(C) | 2(H,E) | 0 | 1(I) | 0 | 0 | 0 | 4 |
| Medium | 0 | 1(H) | 1(E) | 0 | 0 | 0 | 1(C) | 1(I) | 4 |
| High | 0 | 1(C) | 2(H,E) | 0 | 0 | 1(I) | 0 | 0 | 4 |
| SUB-TOTAL | 0 | 3 | 5 | 0 | 1 | 1 | 1 | 1 | 12 |
| Complexity (Percep.) | | | | | | | | | |
| Low | 0 | 1(C) | 1(H) | 1(E) | 0 | 1(I) | 0 | 0 | 4 |
| Medium | 0 | 0 | 2(C,E) | 0 | 0 | 2(H,I) | 0 | 0 | 4 |
| High | 1(C) | 0 | 0 | 0 | 0 | 0 | 0 | 3(H,I,E) | 4 |
| SUB-TOTAL | 1 | 1 | 3 | 1 | 0 | 3 | 0 | 3 | 12 |
| Totals | #(%) | #(%) | #(%) | #(%) | #(%) | #(%) | #(%) | #(%) | #(%) |
| HRA - Overall | 1(2.1) | 2(4.2) | 4(8.2) | 0(0) | 0(0) | 3(6.3) | 1(2.1) | 1(2.1) | 12(25.0) |
| HRA - Causal | 4(8.2) | 5(10.4) | 1(2.1) | 0(0) | 0(0) | 0(0) | 2(4.2) | 0(0) | 12(24.9) |
| HRA - Inter. | 0(0) | 1(2.1) | 1(2.1) | 0(0) | 2(4.2) | 4(8.2) | 1(2.1) | 3(6.3) | 12(25.0) |
| HRA - End-Result | 0(0) | 0(0) | 7(14.6) | 3(6.3) | 0(0) | 0(0) | 1(2.1) | 1(2.1) | 12(25.1) |
| TOTAL | 5(10.3) | 8(16.7) | 13(27.0) | 3(6.3) | 2(4.2) | 7(14.5) | 5(10.5) | 5(10.5) | 48(100.0) |

1. The implementation of the HRA causal variables type of information system would likely be the most successful.
2. The implementation of HRA intervening variables type of information system would likely be the least successful.
3. The greatest support would likely be for the medium complexity HRA causal variables type of information system.
4. The greatest criticism would likely be against the HRA intervening variables type of information system.
5. The secretary-treasurers would be the most supportive group (zones 1 and 2) while the relationship-oriented administrators and superintendents would be the second most supportive groups.
6. The task-oriented group would be the most opposed group (zones 7 and 8) with the high complexity group (self-perception) being the second most opposed group.
7. The low and high complexity organization (numeric) and low and medium complexity organization (self-perception) groups were the most neutral (zones 3 to 6) in their attitudes and strength of attitudes.

## SUMMARY

The first section provided the four HRA-related behavioral propositions and described the eight probable behavioral pattern zones. Sections two to nine reported on the probable behavior patterns of each statistically significant group in terms of the eight study sub-problems while the last section compared the probable behavioral patterns of the sixteen independent variable study groups. Some of the major general

## SUMMARY (Cont'd)

findings were:

1. The secretary-treasurers would be the most supportive group.
2. The task-oriented group would oppose the implementation more than any other group.
3. The greatest support would be for the HRA causal variables.
4. The greatest opposition would be toward the HRA intervening variables type of information.

# CHAPTER VIII

## SUMMARY, FINDINGS AND CONCLUSIONS, AND IMPLICATIONS

Chapter Eight presents the study findings in summary form along with a number of conclusions and implications for further research.

### SUMMARY

The main purpose of this exploratory-descriptive study was to ascertain and compare the attitudes held by various types of educational administrators in selected Alberta school jurisdictions toward Human Resources Accounting and the HRA causal, intervening and end-result variables. Within this context, the study addressed eight specific sub-problems.

#### Sub-Problems

The first four sub-problems addressed the question of the direction and strength of attitudes and significant differences in the direction and strength of attitudes toward HRA held by:

1. principals, superintendents and secretary-treasurers,
2. relationship-oriented, socioindependent, and task-oriented administrators,
3. administrators who functioned in low, medium and high complexity organizations (derived numerically) and,
4. administrators who functioned in low, medium and high complexity organizations (self perception).

The last four sub-problems addressed the question of the direction and strength of attitudes and significant differences in the perceived attitudes and strength of attitudes toward HRA causal, intervening and end-result variables type of information held by:

5. principals, superintendents and secretary-treasurers,
6. relationship-oriented, socioindependent, and task-oriented administrators,
7. administrators who functioned in low, medium and high complexity organizations (derived numerically) and,
8. administrators who functioned in low, medium and high complexity organizations (self perception).

In addition, the study inferred probable behaviour patterns toward the assumed implementation of HRA by significantly different respondent groups.

## Conceptual Framework

By applying a modified version of Zetterberg's axiomatic reduction technique to a literature review of HRA, ten postulates were derived from 86 propositions. The selected postulates led to the establishment of the conceptual framework. Postulate seven, which asserted that the greater the positive level or value of human resource variables (investment, causal, intervening, end-result, rate-of-return and external environment) the greater the capacity for organizational productivity and effectiveness, formed the basis for the dependent variable. Postulates eight and nine identified the independent variables of organizational complexity and leadership style. The third independent variable chosen was administrative position.

## Research Design

A factorial research design was chosen because of the economy offered by a single design and because it allowed an investigation of the interactive effects of several independent variables simultaneously.

## Methodology and Statistical Treatment of the Data

The study sample included all principals, superintendents and secretary-treasurers in Alberta schools in the fall of 1976, excluding those in the Edmonton and Calgary public and separate school jurisdictions. In total, 1031 questionnaires were distributed (816 to principals, 130 to secretary-treasurers and 85 to superintendents) and 519 or 55.4% were returned. Of these, 423 were useable.

Several instruments were included in the questionnaire. The LPC instrument was used to measure leadership style. The semantic differential (SD) technique was chosen for collecting data with respect to attitudes and strength of attitudes. In order to appropriately and adequately design the semantic differential section of the questionnaire, a three-phase pilot study was conducted. Factor analysis was used to determine and confirm the existence of the evaluative and potency dimensions. In addition, factor analysis was used to select the final 13 scale items for the nine HRA concepts.

The pilot study used the image factor analysis model for the verification and selection process of scale items, but in addition, the results of the principal component factor analysis were factor matched against the image model. Factor matching showed an extremely high correlation and hence the principal component model was used for the final study.

The direction and strength of attitudes of respondents toward HRA and the HRA causal, intervening and end-result variables were derived from the questionnaire data. The resultant evaluative and potency scores were translated into respondent attitudes and strength of attitudes. Probable behavior patterns of statistically significant groups were inferred.

The demographic data section of the questionnaire was used to determine the administrative position of each respondent while a five-point Likert-type scale was used to gather data relating to perceived levels of complexity. The three major configuration elements of complexity were identified as vertical differentiation, horizontal differentiation and spatial dispersion. Thurstone's Force Pair Comparison technique was used to determine scaled values for each complexity determinant. The individual configuration counts were converted using the scaled values and a composite score of complexity derived.

The data were analyzed by using the one-way analysis of variance (ANOVA) test with Scheffé's test for multiple comparison of means.

## FINDINGS AND CONCLUSIONS

In general, there was a great degree of variability of direction and strength of attitudes of the various groups toward HRA and the HRA causal, intervening and end-result variables. Of the sixteen F-tests run, six revealed the existence of statistically significant differences between the various groups. Within these six positive F-tests, nine of the thirty-six possible between - group means were found to be significantly different.

### Significant Findings Summary

The statistically significant differences which were found in certain directions and strength of attitudes of sub-problems 2, 4, 6 and 8 are summarized below:

**Sub-Problem Two**

1. Relationship-oriented administrators had a significantly more positive attitude toward HRA than either the socioindependent (0.02 probability level) or the task-oriented (<0.01 probability level) administrators.

**Sub-Problem Four**

2. Administrators who functioned in highly complex organizations (self-perception) had a significantly stronger conviction of their slightly negative attitude toward HRA than did the administrators who functioned in organizations of medium complexity (0.03 probability level).

**Sub-Problem Six**

3. Relationship-oriented administrators had a significantly more positive attitude toward HRA causal variables than the task-oriented administrators (0.04 level of probability).
4. Relationship-oriented administrators had a significantly more positive attitude toward HRA intervening variables than the socioindependent (0.04 probability level) and the task-oriented (0.01 probability level) administrators.
5. Relationship-oriented administrators had a significantly more positive attitude toward HRA end-result variables than the socioindependent (0.01 probability level) and the task-oriented (<0.01 probability level) administrators.

## Sub-Problem Eight

6. Administrators who functioned in highly complex organizations, as determined through self-perception, had a significantly stronger conviction of their slightly positive attitude toward the HRA causal variables than the administrators who functioned in organizations of medium complexity (0.02 probability level).

## Attitudinal Findings and Behavioral Inferences

The attitudes and strength of attitudes of the statistically signficant respondent groups as well as the inferred probable behavior patterns of these groups toward HRA and the three HRA variables are summarized below (Appendix L provides a graphic summary of the attitudes, strength of attitudes and probable behavioral patterns of the respondents):

## Sub-Problem Two

The relationship-oriented administrators had a significantly more positive attitude toward HRA than did the socioindependent and task-oriented administrators. Relationship-oriented administrators had a moderately positive or favorable attitude (+1.80) while the task-oriented (-1.17) and socioindependent (-0.61) administrators had a moderately and somewhat negative attitude. On the other hand, the strength of the positive attitude of the relationship-oriented administrators was slightly weak.

In terms of probable behavior patterns, the relationship-oriented respondents would probably provide at least minor support but would have no direct involvement. However, the task-oriented administrators would likely engage in minimal to no criticism and might get slightly involved in opposition-type activities. The socioindependent administrators would probably also engage in minimal to no criticism but would likely not get involved in any opposition related activities. The attitude of the socioindependent administrators could be changed quite easily while that of the task-oriented administrators would be moderately difficult to change.

## Sub-Problem Four

The administrators who perceived themselves functioning in highly complex organizations had only a slightly favorable attitude (+0.18) while the administrators who functioned in medium complexity organizations had only a slightly negative attitude (-0.16). However, the strength of the slightly negative attitude of the high complexity administrators was extremely strong (+2.71) while the strength of the slightly negative attitude of the medium complexity administrators was somewhat weak (-0.78). The low complexity group did not differ significantly.

With regard to probable behavior patterns, the high complexity administrators (zone 8) would likely become strong opponents and critics. As well, they would likely become personally and intensely involved in opponent-type activities to the degree of assuming opposition leadership. Finally, it would probably be very difficult to change their attitude. The medium complexity administrators (behavior zone 6) would probably engage in minor to no criticism and not get involved in any opposition-type activities. As well, they could not be expected to assume a leadership role. Finally, their behavior could be changed quite easily.

## Sub-Problem Six

The attitudinal findings and behavioral inferences pertaining to this sub-problem can best be summarized by examining each of the HRA variables separately.

Leadership Style and HRA Causal Variables. Relationship-oriented administrators had a significantly more positive attitude than the task-oriented administrators. The relationship-oriented administrators portrayed a very positive attitude while the task-oriented group indicated a slightly negative attitude. On the other hand, both groups revealed some strength in the conviction of their attitude. The socioindependent group did not differ significantly.

While the task-oriented (behavior zone 8) group would be moderately to extremely critical (opponents), the relationship-oriented (behavior zone 1) group would be moderately to extremely supportive proponents and advocates. While the task-oriented groups would likely get personally, directly and intensely involved in opposition-related activities, the relationship-oriented administrators would probably get personally, directly and intensely involved in supportive activities. Both groups would provide leadership to their respective causes. Finally, the positive attitude of the relationship-oriented administrators and negative attitude of the task-oriented administrators would be very difficult to change.

Leadership Style and HRA Intervening Variables. Relationship-oriented administrators had a significantly more positive attitude than the socioindependent and task-oriented administrator groups. The relationship-oriented administrators had a moderately positive attitude while the socioindependent group was considerably negative and the task-oriented group very negative. The task-oriented and relationship-oriented administrators had a slightly strong conviction, while the socioindependent group's conviction was considerably weak.

The probable behavior pattern of the relationship-oriented administrators would likely differ significantly. The relationship-oriented administrators (behavior zone 2) would likely provide minor to no support, would not get directly involved, would assume no leadership role and the somewhat positive attitude could be changed moderately to quite easily. Second, the task-oriented administrators (behavior zone 8) would probably be moderately to extremely critical, would likely get personally, directly and intensely involved in opposition-related activites, could assume opposition leadership and their very negative attitudes would be difficult to change.The socioindependent administrators (behavior zone 5) would likely be neutral or slightly opposed, would not criticize the assumed implementation, would probably not get involved in any opposition activities, would assume no leadership role and their attitudes would probably be quite easy to change.

Leadership Style and HRA End-Result Variables. Relationship-oriented administrators had a significantly more positive attitude than the socioindependent and the relationship-oriented administrators. The task-oriented administrators had slightly negative attitudes complemented by a partially strong conviction. The socioindependent group had a slightly positive attitude but a considerably weak conviction of that slightly positive attitude. The relationship-oriented administrators had extremely positive attitudes accompanied by moderately weak conviction levels.

Even though the relationship-oriented administrators had extremely positive attitudes (behavior zone 14), they would likely provide little or no support nor get involved in supportive activities since the intensity of their positive attitudes was moderately weak. As well, they would probably assume no leadership role while the attitudes could be quite easy to change. The task-oriented administrators (behavior zone 7) might engage in minor to no criticism as opponents and might get minimally involved in opposition activities; they would not likely assume leadership roles. Finally it would be moderately to quite difficult to change the attitude of this group. The socioindependent administrators (behavior zone 3) would provide minor to no support as proponents and would likely not have any direct involvement in supportive-type activities. The attitude of this group could be changed moderately to quite easily.

## Sub-Problem Eight

The conclusions and findings can be summarized best by reviewing the attitudes and strength of attitudes toward each HRA variable separately.

**Perceived Complexity and HRA Causal Variables.** The administrators who functioned in highly complex organizations had a significantly stronger conviction of their slightly positive attitudes than the administrators who functioned in organizations of medium complexity. Both groups had a slightly positive attitude. While the medium complexity group had a somewhat weak conviction level, the high complexity group had an extremely strong level of conviction. The low complexity group did not differ significantly.

The high complexity group would tend to be proponents and advocates who would engage in providing extreme support to the point of not only getting personally, directly and intensely involved in supportive-type activites, but also providing strong supportive leadership. The medium complexity group would likely provide minor to no support as proponents, have no direct involvement and assume no supportive leadership role. The attitude of the high complexity group would be extremely difficult to change while the attitude of the medium complexity group would be moderately to quite easy to change.

## Major General Findings and Conclusions

Some of the more general major findings not referred to in the above findings and conclusions are:

1. The most positive attitudes and strongest conviction of the positive attitudes were toward the HRA causal variables.
2. The most negative attitudes accompanied by a somewhat strong intensity of the negative attitudes were toward the HRA intervening variables.
3. The secretary-treasurers had the most positive attitudes and strength of those positive attitudes.
4. The task-oriented leadership style administrators had the most negative attitudes accompanied by some strength of the negative attitudes - they would be the strongest opponents and work actively against the implementation.
5. The self-perceived medium complexity group was the most neutral group.
6. The most bi-polar or opposite attitudes and strength of attitudes were toward the HRA causal variables.
7. The most dispersed or diverse attitudes and strength of attitudes were toward HRA and the HRA intervening variables.
8. The greatest variablility in attitudes and strength of

attitudes was expressed by the administrators who perceived themselves as functioning in highly complex organizations.

## IMPLEMENTATION AND OTHER IMPLICATIONS

The findings of this study have a number of implementation implications, should any Alberta school jurisdiction choose to implement HRA or any one of the HRA causal, intervening, and/or end-result variables, such as:

1. The instrument developed for this study could be utilized prior to any implementation considerations.
2. The findings of this study could be used to develop an implementation strategy. If the findings of this study would be sufficiently current, then six tactical policy implementation strategies could be:
   (a) Commence with the implementation of the HRA causal variable as part of the first phase and then implement the entire concept in phase two.
   (b) The first part of phase one should deal with the implementation of the HRA causal variable by secretary-treasurers only.
   (c) The second part of phase one should involve superintendents.
   (d) The secretary-treasurers should be encouraged to take on a leadership role.
   (e) The relationship-oriented administrators should be identified and involved in the implementation process.
   (f) The socioindependent administrators should be

ascertained and a strategy developed for changing their attitude to a positive attitude with some strength of conviction since the attitude of this group should be quite easy to change.

3. If the findings of this study should be deemed to be dated, then this instrument should be administered and an implementation strategy struck from the findings, and
4. By predicting the probable behavior pattern of any group of individuals toward the assumed implementation of HRA, certain tactical strategy considerations could be formulated:
   - (a) Which group(s) are supportive (zones 1 and 2)?
   - (b) Which group(s) are opposed (zones 7 and 8)?
   - (c) Which group(s) are neutral (zones 3 to 6)?
   - (d) Which HRA variable(s) is/are most acceptable to which groups?
   - (e) Which HRA variable(s) is/are most opposed?
   - (f) Which HRA variable(s) is/are the specific group(s) opposed to?
   - (g) Commence implementation of the variable that is most acceptable.
   - (h) Commence implementation with or seek initial support from the most supportive group.
   - (i) Ask the most supportive group (zones 1 and 2) to become involved in implementation activities.
   - (j) Encourage the most supportive group (zones 1 and 2) to take on a leadership role, and
   - (k) Develop strategies to exert pressure upon those neutral groups whose attitudes would be relatively easy to

change toward a more positive position and stronger in conviction.

Some other implications of this study are:

1. The instrument developed to measure organizational complexity can be applied in any organizational type and setting.
2. The semantic differential technique used in this study can be utilized to measure the direction and strength of attitudes of the personnel of any organization toward HRA and the HRA causal, intervening and/or end-result variable type of information.

## IMPLICATIONS FOR FURTHER RESEARCH

This study gives rise to several implications for further research:

1. The organizational complexity instrument developed for this study, as based upon Thurstone's Force Pair Comparisons technique, needs to be tested in several different types of organizations and subjected to various replication tests in order to determine the validity and reliability levels.
2. The semantic differential instrument developed to measure the direction and strength of attitudes toward HRA and the HRA causal, intervening and end-result variables should be retested in several different organizational settings in order to establish the appropriate reliability and validity levels.
3. Further research and testing should be undertaken with respect to the four HRA behavioral propositions and eight probable behavior zones.

4. Further theoretical and experimental research is required in the general area of HRA in order to build upon the existing deficient theory on HRA.
5. Further exploratory - descriptive studies should be undertaken with respect to the remaining seven HRA postulates identified through the axiomatic reduction technique, and
6. Studies should be undertaken with respect to the nine identified hypotheses.
7. Similar HRA attitude and strength of attitude studies should incorporate the investment and rate-of-return HRA variables.

## SUMMARY

Chapter Eight dealt with the summary, findings and conclusions, implementation and implications for further research. Section one summarized the purpose, sub-problems, conceptual framework, methodology and results of the data in terms of findings. The second section presented the conclusions and findings while the third section discussed implementation and other implications. The statistically significant findings were:

1. Relationship-oriented administrators had significantly more positive attitudes toward HRA and the HRA intervening and end-result variables than did the socioindependent and task-oriented administrators.
2. Relationship-oriented administrators had significantly more positive attitudes toward the HRA causal variables type of information than did the task-oriented administrators.
3. Administrators who perceived themselves functioning in highly complex organizations had significantly stronger

convictions of their slightly negative attitude toward HRA than did respondents who perceived themselves functioning in organizations of medium complexity.

4. Administrators who perceived themselves functioning in highly complex organizations had significantly stronger convictions of their slightly positive attitudes toward the HRA causal variables than did respondents who functioned in medium complexity organizations.

The four major behavioral findings were:

1. The secretary-treasurers would be the most supportive group.
2. The task-oriented group would oppose the implementation more than any other group.
3. The greatest support would be for the HRA causal variables.
4. The greatest opposition would be toward the HRA intervening variables type of information.

Finally, section four identified some implications for further research.

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## Government Document

Alberta Department of Education Capital Fund Advisory Committee Meeting Minutes of September 16, 1977.

# APPENDIX A

# EXPLICATION OF HUMAN RESOURCES ACCOUNTING

## EXPLICATION OF HRA

As indicated in Chapter One, the 1974 HRA committee report (Bruns, et. al., 1974:115) suggested that because the early work on HRA focused primarily on getting measurements of human resources into management and investor reports, the emphasis was too narrow and naive. The report asserted that HRA "...is better viewed as a part of the process of managing people in organizations," and as such, the purpose of HRA is "...not merely to account but to improve the way people contribute to organizations, society and economic well-being."

## TYPES OF HRA INFORMATION

The underlying assumption of HRA theory relates to two complementary managerial aspects that flow from HRA information: financial and human. Financial management aspects are concerned with the dollar valuation and capitalization of the existing inventory of employed persons within the organization and any improvements or increase in dollar value that may accrue as a result of training or experience. As well, HRA financial management is concerned with the dollar valuation of "rate-of-return" or original dollar investments in human resources. The human resource management aspect is concerned with the measurement or valuation and improvement in HRA casual variables such as managerial behavior, individual skills and competencies and leadership style, intervening variables such as employee perception, motivation, attitude and subordinate peer behavior and end result variables such as satisfaction and productivity. HRA then, is concerned with the monetary and non-monetary measurement of investment, causal, intervening, end-result and rate-of-return variables and having management use the resulting HRA types of information to improve, "...the management of human resources so that the quantity and quality of goods and services are increased" (Bruns, 1974:116).

The proponents of HRA argue that HRA type of information should not only improve managerial and/or organizational decision-making, but as well, could have a cognitive and behavioral impact upon management that could result in improved utilization, maintenance, acquisition and development of human resources. Using the HRA framework, Brummet, et al., (1973:532) define management as the process of acquiring and developing, maintaining and utilizing a human-physical-financial resource mix for the achievement of organizational objectives as demonstrated in Figure A.1. Brummet, et. al., (1973:538) go on to state that:

> Human resource accounting system applications are oriented toward fulfilling three basic organizational information needs: (1) resource acquisition and development information, (2) resource

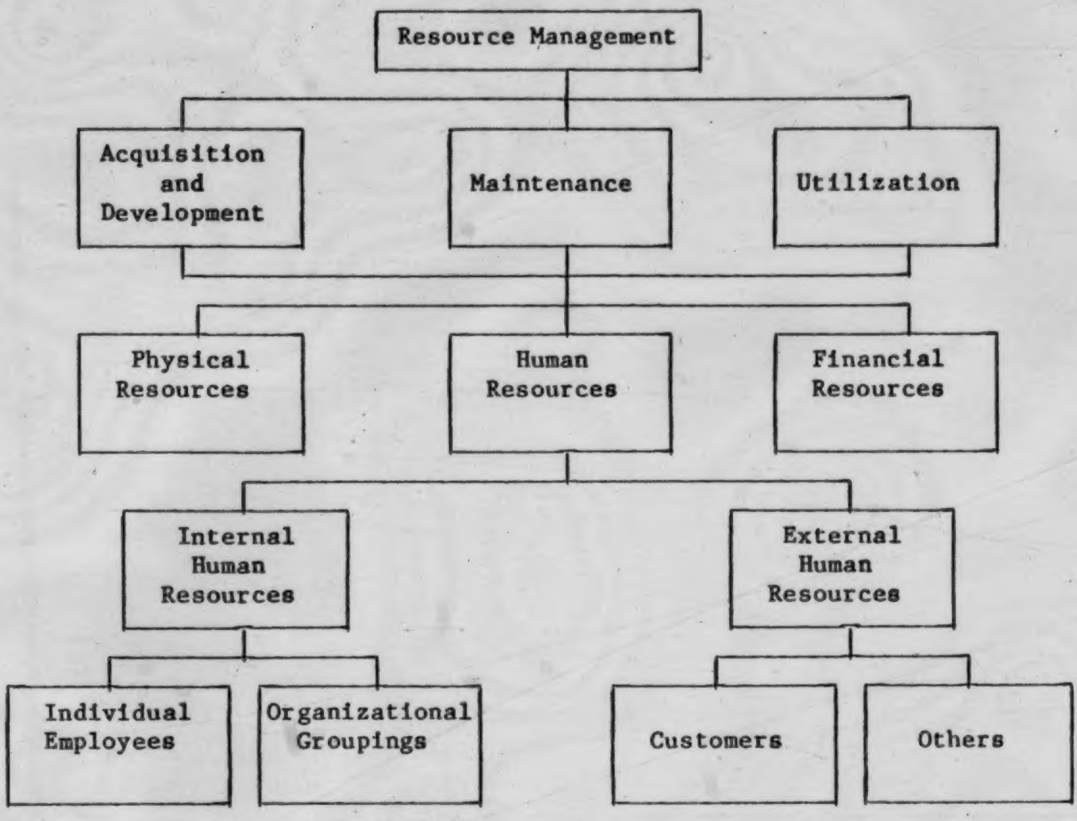

Resource Management
Acquisition and Development
Maintenance
Utilization
Physical Resources
Human Resources
Financial Resources
Internal Human Resources
External Human Resources
Individual Employees
Organizational Groupings
Customers
Others

Figure A.1 Resource Management Information Needs
(Brummet, et. al., 1973:532)

maintenance or condition information and (3) resource utilization information.

*Acquisition and development* refers to the measurement of outlay costs when assets are acquired or developed as well the need for estimating replacement costs at a time when necessary. *Maintenance information* is needed to ascertain whether resource investments have yielded desired new capabilities, levels of competence, types of behavior and forms of organization, while *utilization* refers to performance. Unfortunately, conventional management information and accounting systems have provided these three types of information for physical and financial resources but not for human resources. The general framework of HRA, therefore, is to develop a body of human resource accounting theory, techniques and information that should overcome some of these information deficiencies.

## ECONOMIC THEORY OF VALUE

The essence of HRA suggests that approaches need to be developed to measure human resource value not only in monetary terms, but non-monetary terms as well. Flamholtz (1972:667) suggests that, "A theory of the value of people to organizations is an essential prerequisite for the problem of developing methods of measuring human resource value." The theory should, Flamholtz adds, first identify the variables which determine a person's value to an organization and second, should facilitate the development of non-monetary surrogate measures of human value. Human value, argues Flamholtz (1974:114), "is derived from general economic theory."

Economic theories of value state that the criterion determining whether and to what extent any given "object" possesses value is the perceived ability to render future economic utility, benefits or services (Flamholtz, 1972:667). If an object is not capable of rendering any future economic service, it has no value. The concept of "human value" is simply an extension of general economic value theory. This being the case, then, Flamholtz (1972:669) defines human value synonomously with the value of other resources; "...the present worth of the set of future service he is expected to provide during the period he is anticipated to remain in the organization."

## VALUATION MODELS

While physical and financial resources are owned by the organization, human resources are not. Human resources have some flexibility in supplying or withholding their services and hence the determination of future expected benefit is difficult to ascertain. Generally speaking, three general theories of human resource valuation exist. The earliest theory, developed by R. Likert in the mid-sixties, "...attempted to formulate a model of the variables which determine the effectiveness of a firm's 'human organization' and, in turn, the effectiveness of the enterprise as a whole" (Hermanson, et al., 1973:175). Likert's model, shown as Figure A.2, (Likert and Bowers, 1974:408), reflects the value of the human organization since it identifies the determinants of the productive capability of the human resources.

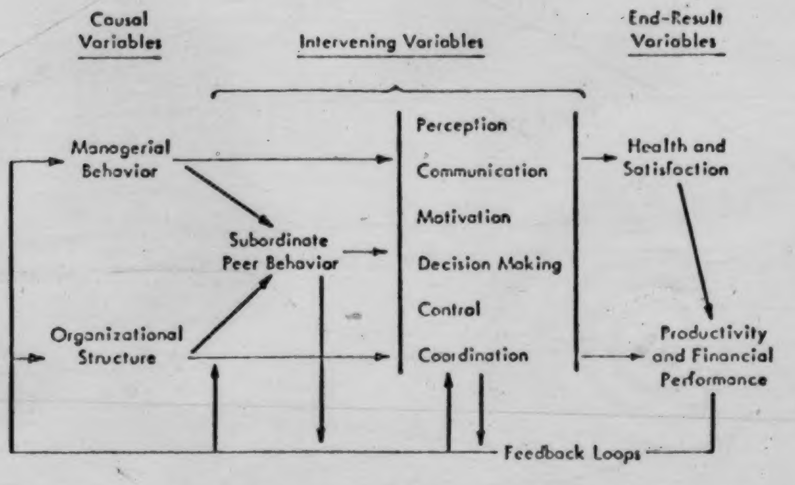

Causal Variables
Intervening Variables
End-Result Variables
Managerial Behavior
Subordinate Peer Behavior
Organizational Structure
Perception
Communication
Motivation
Decision Making
Control
Coordination
Health and Satisfaction
Productivity and Financial Performance
Feedback Loops

Figure A.2 Likert's Basic Human Resource Valuation Model

Likert's model is comprised of three sets of variables: causal, intervening and end-result variables. Likert is concerned, claim Dermer and Siegel (1974:90), with current management practice because the model focuses mainly on end-result variables like sales and profits, and as such, managers are concerned with human resource problems such as satisfaction, motivation, cohesion, etc. only when required. If management concerned itself with the human resource factors (intervening variables and satisfaction) as part of their management practice, and as a result improved employee motivation, satisfaction, etc., then the organization could expect long term benefits from the human organization. However, it is difficult to attach real monetary values to human resource values in Likert's model.

The second model (Figure A.3) which is an extension of Likert's basic scheme, was proposed by Brummet, Pyle and Flamholtz (1973:534). This model has added "investment" and "return on investment" variables for, "...all business firms wish to improve organizational performance" (Brummet, et al., 1973:533). In doing so, Brummet's model provides for the determination and hence accounting of the amount of money required (investment variable) to improve performance (the present dollar worth of expected future services). Brummet, et al., (1973:533) emphasized the need to extend capital budgeting concepts to human resources accounting. This model related the five HRA variables to the human resource management information requirements identified in Figure A.1.

The third model, which was Flamholtz's model revised by the Committee on HRA (Hermanson, et. al., 1973:178) and depicted in Figure A.4, is more encompassing because it includes economic, social and psychological determinants of a person's value. Flamholtz's model suggests that the individual brings cognitive abilities (intelligence) and personality traits (need for achievement, etc.) to the organization, which in turn, form the source of work-related value determinants of skills, activation level (motivation) and attitudes. But a person's value is related to the role or positions that person can or will occupy. Organizational characteristics of structures and management style determine the person's role and the rewards available; these in turn, interact with the individual determinants to produce the conditional value elements of productivity, promotability and transferability as well as the human resource's satisfaction with the organization. Hence, Flamholtz (1974:115) suggests there are two determinants to measuring the value of a human asset because of the uncertainty of realizing a person expected future services: expected conditional value and expected realizable value. Expected conditional value refers to the amount of services an organization could potentially realize from the services of a person assuming the person stayed with the organization during the entire period of his productive life. Expected realizable value is the amount of service that could be expected from a person assuming the likelihood of turnover. The interaction of the person's conditional value and probability or maintaining organizational membership produces, "...the ultimate construct--the person's expected realizable value" (Hermanson, et al., 1973:177).

The above three general HRA models are all based upon economic

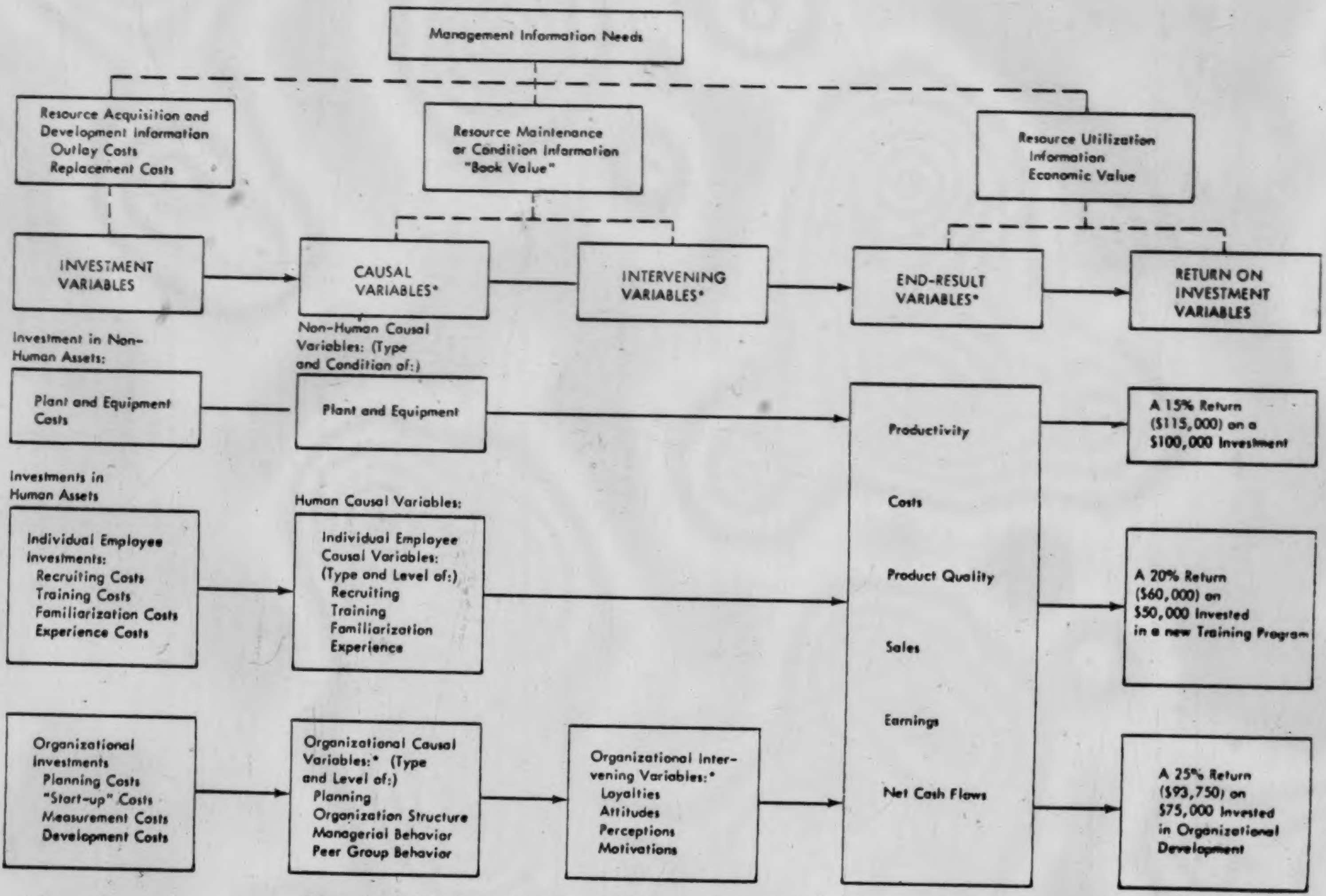

Management Information Needs
Resource Acquisition and Development Information Outlay Costs Replacement Costs
Resource Maintenance or Condition Information "Book Value"
Resource Utilization Information Economic Value
INVESTMENT VARIABLES
CAUSAL VARIABLES*
INTERVENING VARIABLES*
END-RESULT VARIABLES*
RETURN ON INVESTMENT VARIABLES
Investment in Non-Human Assets:
Plant and Equipment Costs
Non-Human Causal Variables: (Type and Condition of:)
Plant and Equipment
Investments in Human Assets
Individual Employee Investments: Recruiting Costs Training Costs Familiarization Costs Experience Costs
Human Causal Variables:
Individual Employee Causal Variables: (Type and Level of:) Recruiting Training Familiarization Experience
Organizational Investments Planning Costs "Start-up" Costs Measurement Costs Development Costs
Organizational Causal Variables:* (Type and Level of:) Planning Organization Structure Managerial Behavior Peer Group Behavior
Organizational Intervening Variables:* Loyalties Attitudes Perceptions Motivations
Productivity
Costs
Product Quality
Sales
Earnings
Net Cash Flows
A 15% Return ($115,000) on a $100,000 Investment
A 20% Return ($60,000) on $50,000 Invested in a new Training Program
A 25% Return ($93,750) on $75,000 Invested in Organizational Development

Figure A.3 Expanded HRA Valuation Model with Examples of Variables (Brummet, et. al., 1973:534)

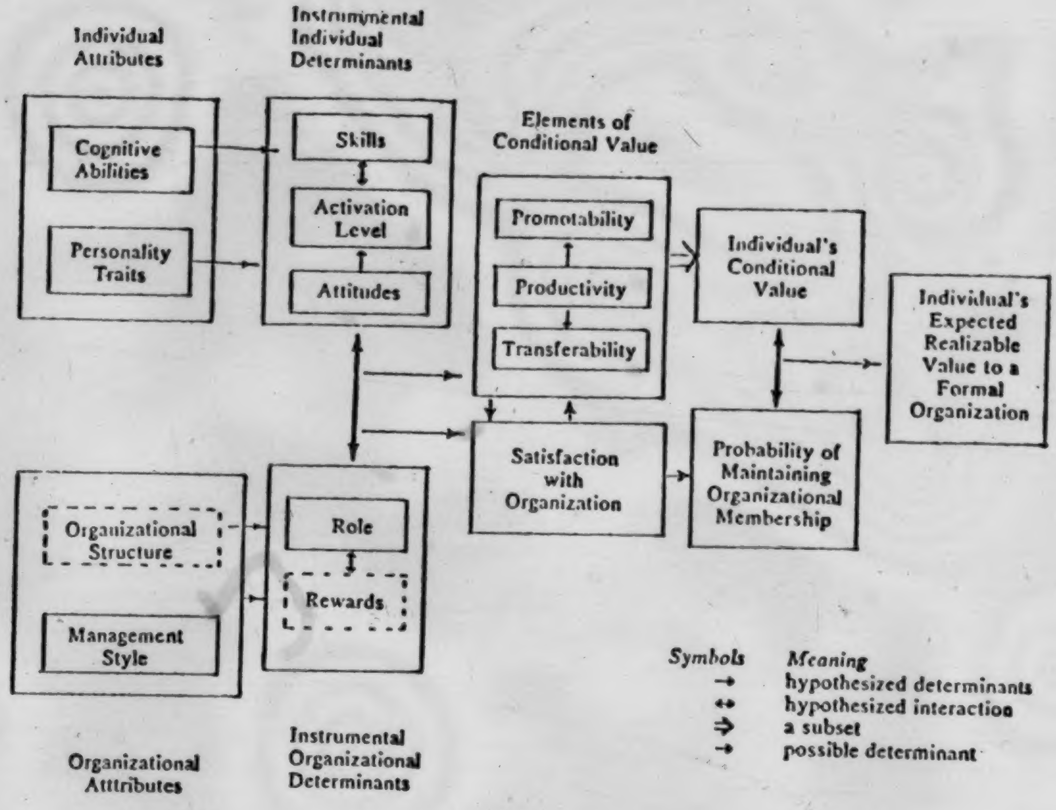

Individual Attributes
Instrumental Individual Determinants
Cognitive Abilities
Personality Traits
Skills
Activation Level
Attitudes
Elements of Conditional Value
Promotability
Productivity
Transferability
Individual's Conditional Value
Individual's Expected Realizable Value to a Formal Organization
Satisfaction with Organization
Probability of Maintaining Organizational Membership
Organizational Structure
Management Style
Role
Rewards
Organizational Atttributes
Instrumental Organizational Determinants
Symbols
Meaning
→ hypothesized determinants
↔ hypothesized interaction
⇒ a subset
→ possible determinant

Figure A.4 Revised Model of the Determinants of an Individual's Value to a Formal Organization

theories of value. All three models represent a logical framework for understanding and explaining the factors comprising and influencing an individual's economic value to an organization. They also demonstrate the social and psychological factors associated with expected or realizable long term benefits. As well, they demonstrate the difficulties in measuring human resource value, in real dollar terms, for accounting and even in utilizing HRA information and human resources. The measurement of the value of an individual, exhorts Brummet (1969:18), is difficult because "...we expect to rely very substantially on social-psychological measurement".

## MAJOR ACCOUNTING TENET OF HRA: CAPITALIZATION

The acceptance of the economic theory of value has resulted in HRA questioning a well accepted conventional accounting principle that states costs associated with personnel recruitment, development and experience are considered as operational expenses. However, Adam Smith in 1776 suggested that human assets should be capitalized (Dunn and

Stephens, 1972:209):

> The acquisition of such talents...always costs a real expense, which is a capital fixed and realized, as it was, in his person...A workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labor, and which though it costs a certain expense, repays the expense with a profit.

In essence, Smith observed that human resources should be considered a capital outlay or fixed asset type of investment that could be amortized or depreciated over the expected life of the resource.

Smith's observation was much like the recommendation made by the American Accounting Committee on Human Resource Accounting in their Statement of Basic Accounting Theory: "Costs should be capitalized when they were incurred in order to yield future benefits and when such benefits can be measured" (Hermanson, et al., 1973:170). This recommendation was generated because it was observed that accepted accounting practices charged human capital formation expenses against the operating accounts while comparable outlay on physical capital was charged to the capital account. As a result, a zero value was assigned to the human asset while an amortized amount was charged annually to the capital account for physical assets. Also, the American Accounting Assciation recommedation explicitly referred to recruitment and training expenditures. Hence, in part, HRA suggests that those human resource costs that can be measured and were incurred for future benefits, such as recruitment and training, should be capitalized instead of expensed, and then amortized.

## HRA MEASUREMENT TECHNIQUES

The foregoing three HRA valuation models provide a general framework for viewing the social, psychological and monetary variables associated with determining the future expected service (value) of human resources. Although they provided a conceptual framework, they did not provide any specific means of measuring the actual or specific monetary, social or psychological values. HRA is totally dependent upon ascertaining specific values.

Hermanson, et al., (1973:171) proposed a three-tiered typology for classifying various measurement techniques: cost, value and non-monetary. This typology is not appropriate for the "value" measures appear to deal more with indirect means of assigning monetary values while "cost" measures deal directly with monetary values. As well, Hermanson, et al., (1973:171) stated that their classifiction is arbitrary and not mutually exclusive. A more appropriate classifactory scheme is: direct costs, indirect costs and non-monetary values. Some of the existing specific measurement techniques are briefly explained below:

1. **Historical or Acquisition Cost.** This includes costs associated with recruiting, selecting, hiring, training, placing and developing human resources, capitalizing the costs, and then amortizing them over the expected life span of the value. Losses would be recorded if the human asset was liquidated prematurely. If the life was extended beyond expectancy, then revisions would be made in the amortization schedule (Hermanson, et al., 1973:171).

2. **Replacement Cost.** This is a measure of the cost to replace a firm's existing human resources and includes costs to recruit, train, hire and develop replacements (Hermanson, et al., 1973:172-173).

3. **Opportunity Cost.** This approach suggests scarce human resource employees would be bid upon for their services by managers. The successful bidder, in turn, would enter the bid price in his accounts as a human resource asset (Hermanson, et al., 1973:173).

4. **Current Cost.** The current price that exists for a resource in the market in which it is bought and sold (Flamholtz, 1971:262).

5. **Payroll-Earnings Estimates.** The value of the total human resources of an organization could be ascertained by assuming that the value is worth at least three times payroll; since payroll is about five times earning, then the human resources are valued at 15 times earnings (3 x 5) (Likert and Bowers, 1974:410).

6. **Discounted Future Salaries.** This is known as the adjusted present value method where expected wages or salary payments over the next five years would be discounted at the most recent "normal" rate of return. The result would be modified by a weighted average of the effectiveness of performance over the last five years by an efficiency ratio (Hermanson, et al., 1973:173-174).

7. **Discounted Excess Earnings.** Excess earnings of an organization are allocated to the "unidentified assets" which include human resources (Hermanson, et al., 1973:174).

8. **Forecast Future Earnings.** Employee future earnings would be forecast, discounted to determine the firm's present net value and then allocate a position to human resources based on their own relative contribution (Hermanson, et al., 1973:174).

9. **Mini Human Resources Inventory System.** An ASD (Application Software Development) computer program designed to provide a means of consolidating information about manpower resources into a flexible format serving a wide variety of needs (Grey and Waas, 1974:61).

10. **Performance Measures.** This is an index of an individual's effectiveness in achieving the responsibilities of his position (Flamholtz, 1971:264).

11. **Human Capital Value by Age.** This is the value of human capital of any given person of age "r" at the present value of his remaining future earnings from employment, which is represented (Lev and

Schwartz, 1971:105) by:

$$V_r = \sum_{t-r}^{T} \frac{I(t)}{(1+r)^{t-r}}$$

12. Stochastic Process Model With Service Rewards. The value is ascertained by multiplying the expected quantities of service of employees in each service level with the corresponding probabilities of an individual occupying these services states in the forthcoming period of time. The value of the human resources of the firm is determined by aggregating the expected values of all employees for "n" periods of time (Flamholtz, 1971:259-262).

13. Markovian Model. This model takes into consideration the stochastic nature of duration of stay and promotions of employees in a firm. (Jaggi and Lau, 1974:326). The mathematical formulation is:

$$TV_i = N_i \sum_{n=1}^{\infty} \sum_{j \in S_i} a_{ij}(n)\, r^{(n)}\, V_j$$

## UTILIZATION AND USEFULNESS OF HRA

The measurement and transmittal of HRA types of information to management may result in managers making better decisions. As well, cognitive and behavioral changes could result so that the individual employee is recognized and managed as a valuable asset. Flamholtz (1969:32) stated that the failure to account for human resources, "...can contribute to a kind of human resource myopia: a condition in which managers may intuitively recognize that people are valuable but still tend to ignore or overlook their value." Wright asserted that the new way of thinking about the human resource, "...is coming as an outgrowth of the design of accounting systems adequate to measure the cost of human resources and to report manpower as a capital asset" (Hermanson, et al., 1973:179). Treating human resource investments as assets rather than expenses may cause management to view people as assets possessing expected future benefits. More detail regarding the actual and expected benefits and use of HRA was provided in Chapter Two.

# APPENDIX B

# PERCEPTION AND ATTITUDE

## PERCEPTION AND ATTITUDE

This study attempted to determine the attitudes and strength of attitudes of respondents toward HRA. Attitude measurement is a complex task since attitudes are a set of bipolar (negative-positive) feelings or dispositions toward a sign or concept that gives the person some form of regularized response tendency and as such cannot be seen; hence attitudes must be implied or inferred through behavioral observation. The Semantic Differential (SD) technique gives the direction and intensity of an attitude by asking respondents to react to a series of bipolar adjective pairs. The SD dimensions are premised on the representational mediation processes that a person uses to give meaning to any concept or sign. This representational mediation process is very similar to the perceiving process. Further, it is important to understand perception since it explains how the respondents view HRA and other questionnaire items such as the LPC and organizational complexity.

## IMPORTANCE AND INTERRELATIONSHIPS

Broadly speaking, Thorndike and Hagen (1969:24) suggested that, "... psychologists and educators have been interested in measuring in two general areas, what a person can do (ability) and what he will do (personality)." Klausmeier (1961:5) identified a schematic arrangement of human abilities (what a person can do) which is composed of three domains: cognitive, psychomotor and affective. The cognitive domain involves functions such as the processes of perceiving, remembering, discriminating, inventing and creating, (Klausmeier, 1961:6). The affective domain involves processes which result in feelings, attitudes, values, interests, motives and personality integration. In terms of personality, or what a person will do, or how he will or might respond to the events and pressures of life, Thorndike and Hagen (1968:28) identified five aspects: character, adjustment, temperament, interests and attitudes. Since this study was interested in both perception and attitude, Figure B.1 shows the interrelationship of perception, meaning as in the semantic differential, and attitude to the larger constructs of ability and personality.

The scheme of abilities and personality shown in Figure B.1 and their individual components provides the basis for understanding behavior and hence, predicting behavior, as shown by the dotted interrelationships line (elaborated upon in Chapter Seven). An attitude is a predisposition of an individual toward certain types of responses which accounts for a large portion of individual action and behavior. Perception, stated Nord (1972:19), "... is central to our understanding of human behavior..." since it "... is the process by which an individual gives meaning to the environment." In the context of this study, it is the perception processes that influence the study respondents to respond (behavior) to the questionnaire items in such a way that they demonstrate or portray their attitudes and strength of attitudes. This interrelationship provides the basis for inferring probable behavior patterns of respondents toward the assumed implementation of HRA.

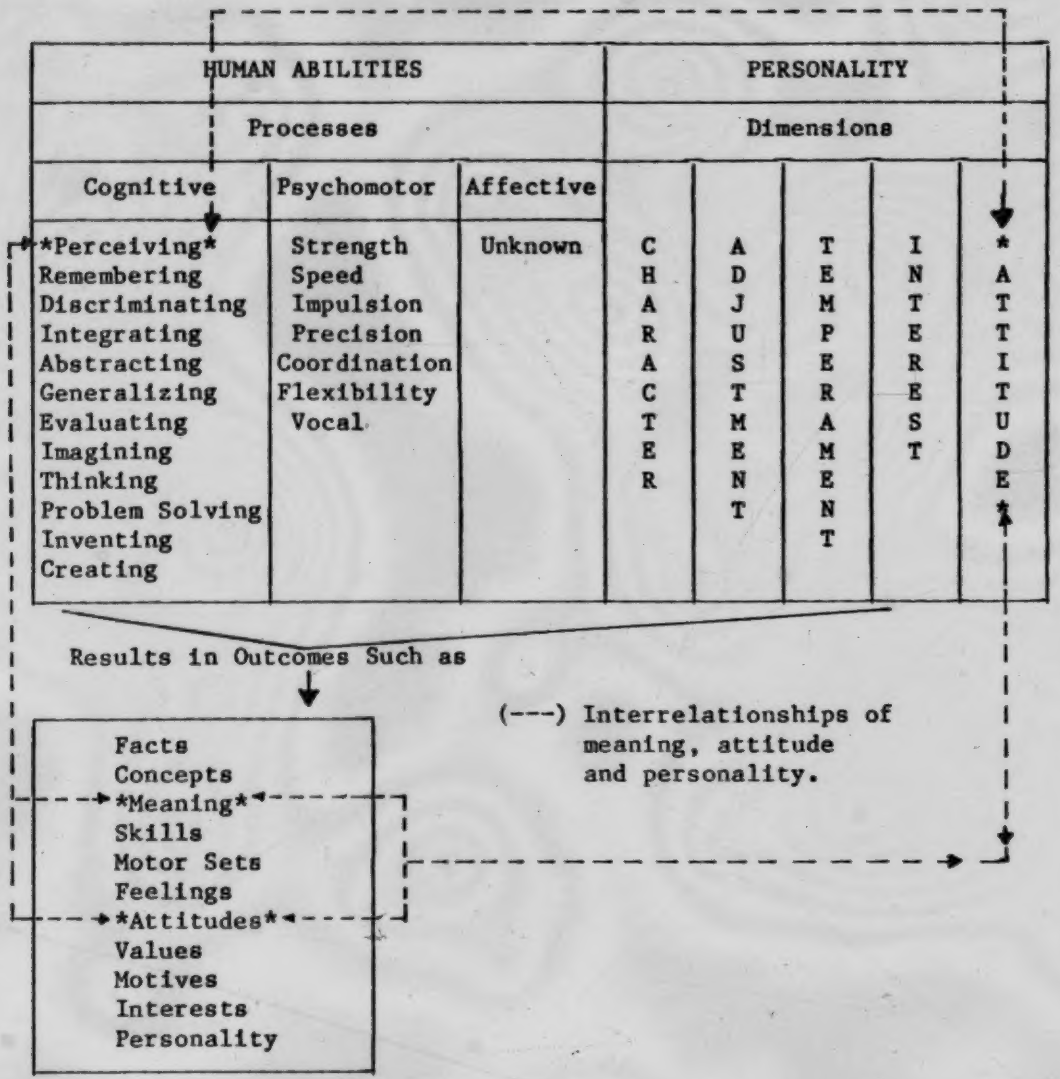

HUMAN ABILITIES
PERSONALITY
Processes
Dimensions
Cognitive
Psychomotor
Affective
*Perceiving*
Remembering
Discriminating
Integrating
Abstracting
Generalizing
Evaluating
Imagining
Thinking
Problem Solving
Inventing
Creating
Strength
Speed
Impulsion
Precision
Coordination
Flexibility
Vocal
Unknown
CHARACTER
ADJUSTMENT
TEMPERAMENT
INTEREST
*ATTITUDE*
Results in Outcomes Such as
Facts
Concepts
*Meaning*
Skills
Motor Sets
Feelings
*Attitudes*
Values
Motives
Interests
Personality
(---) Interrelationships of meaning, attitude and personality.

FIGURE B.1 Schematic Representation of Abilities and Personality and the Interrelationship of Meaning, Attitudes and Perception

The line between perception and attitude, exhort Warr and Knapper (1968:3), "is a blurred one ... (for) there is clearly an interplay between perception and attitude." They (Warr and Knapper, 1968:3) go on to state, "Perception is influenced by attitude; and change and development of attitude is dependent upon the way a source person and his message are perceived". Even though Warr and Knapper (1968:4) suggest that it would be fruitless to distinguish between attitude and perception in a definitive manner, they do differ in three general ways:

1. Attitudes are relatively stable and permanent structures that are fairly resistant to change while perceptions are transitory and flexible,

2. Attitudes have more general or abstract entities as their objects (one can have an attitude toward communism, but you can perceive communism in a very loose sense), and

3. Perception occurs only in the presence of a stimulus while the permanent and generalized nature of an attitude allows an attitude to exist when no stimulus is present.

## PERCEPTION

This section provides the general theoretical framework for perception and perception testing since perception theory provides the basic underpinnings for most of the measurements involved in this study; specifically (1) the Semantic Differential method of measuring the attitudes and strength of attitudes toward HRA, (2) the Law of Comparative Judgement approach to determining a composite measure of organizational complexity, (3) the LPC instrument for ascertaining leadership style and, (4) the five-point Likert-type scale for determining perceived levels of organizational complexity. The importance of the perceptual world is clear since the administrator bases decisions and actions on perceptions (Zalkind and Costello, 1974:33). The attitude of respondents toward HRA is determined through the written responses on the questionnaire; in other words, this attitude is indirectly measured through the responses they elicit.

Perception, asserted Leavitt (1958:36), is "... a major determinant of behavior." Luthans (1974:210) added that both perception and motivation are the most vital psychological processes for behavior. Perception, however, is different from motivation in that while motivation provides the driving force for behavior, perception and attitude provide both the premises and cues for behavior (Leavitt and Pondy, 1973:140).

Perception, stated Nord (1972:19), is central to our understanding of human behavior because perception leads to some interpretation of meaning and, "... it is how a person 'sees' that will determine his behavior... it is how a person 'sees' the situation, not the situation per se, that has important practical implications for organizational behavior". In the instance of this study, it is how various administrators "see" HRA and its variables that will determine their behavior with respect to HRA. Leavitt (1958:27) avowed that perception explains, "How and why people see things differently."

Defining perception is not easy, since as stated by Warr and Knapper (1968:2), "The nature of perception has been pondered by psychologists and philosophers for centuries and yet we are still without a formally accepted definition." Perception is not simply a reaction to a stimulus as Dewey and Bentley pointed out long ago, but rather it is a "transaction" with the environment as suggested by Cantril (Nord, 1972:27). Maier (1973:18) stated that perception is the product of interaction between the organism and the situation. Kolasa (1972:229) further noted that perception is the organization of material that comes in from the outside and the interpretation of the data that is received from inputs; in terms of engineering psychology, scanning and coding. Luthans (1974:210) adds:

> Perception, the individual's interpretation of the situation, can be thought of as the interacting link between the stimulus(s) and organism (0) in the S-----0-----R model of behavior.... everyone perceives the world differently, the same situation may be given different interpretations by various individuals.

Perception, contends Nord (1972:19),"... is the process by which an individual gives meaning to his environment". Garner, Hake and Eriksen (1973:637) define perception in the traditional sense by stating it is an intervening process between stimuli and responses in terms of Perceptual System - Response System, while Van Dalen (1979:82) declared "Perception is the art of linking what is sensed with some past experience to give the sensation meaning". Further, Zalkind and Costello state that Cantril (Scott and Cummings, 1973:84) defined perception as:

> ... a 'transaction' between the perceiver and perceived, a process of negotiation in which the perceptual end product is a result both of influences within the perceiver and of characteristics of the perceived.

Bruner (Harper, et. al, 1964:251) stated perception is, "...the construction of a set of organized categories in terms of which stimulus inputs may be sorted, given identity and given more elaborated, connotative meaning."

As can be seen, the above definitions of perception all emphasize an interaction, a transaction or an interacting link between the perceiver and the environment. Cantril (Nord, 1972:27) suggests that this type of conceptualization,

> ... implies that the meanings and significances we assign to things, to symbols, to people, and to events are the meanings and significances we have built up through our past experiences, and are not inherent or intrinsic in the 'stimulus' itself.

Bruner (1964:231) calls this transaction the, "...process of categorization in which organisms move inferentially from cues to categorical identification". The process is obviously silent and the inference is often unconscious. Warr and Knapper (1968:2) also aver that perception, "... involves an interaction or transaction between an individual and his environment; he receives information from the external world which in some way modifies his experience and behavior."

There appear to be at least two distinctly different schools of thought regarding perception theory; the traditional, simple behaviorist view (S-R and S-S models), and what Osgood (1964:184) has labelled the "Black Box" theorists or what Zalkind and Costello (1974:225) refer to as the "New Look" theorists such as C.E. Osgood (1964:184 - 210), J.E. Bruner (1964:225 - 256), and Cantor and Mischel (1979:4-521).

Traditional behaviorists take the view that perception is the result of a relatively simple interaction between the stimulus and response. The "New Look" or "Black Box" psychologists argue that the interaction is much more complex and involves the entire social world and subjective influences such as needs, values, cultural background and interests.

Research since the mid-sixties has tended to use the basis of the S-O-R model but the emphasis of research has focused on the complex perception-related processes and activities that take place in the mind of the perceiving organism (O) or the Black Box, as identified by Osgood (1964:184), Bruner (1964:225-226), and Zalkind and Costello (1974:225). Recent writings by researchers such as Cohen (1981:441-452), Wyer and Hartwick (1980:242-285), Cantor and Mischel (1979:3-52), Cook (1979) accept the "New Look" model of perception. Warr and Knapper (1968:20) build a perception model that seems to capture most of the interactive perceptual processes and components put forth by the "New Look" theorists.

It is the view of this writer that the debate is overdrawn for there are more similarities in the theories and definitions than differences. All theories suggest that perception involves (1) receiving information from the outside world, (2) responding to a stimulus, (3) the response is a result of a silent or thought process where information is entered, sorted and a judgement made and, (4) the response is also a result of an interaction between the perceiver and the environment. The differences are in the specifics dealing with the interactive component and silent thought process (Black Box). Warr and Knapper (1968:2) support this argument by stating, "But beyond statements of this order of generality there are few formulations which are universally accepted." With this state of affairs where the broad generalities of perception are universally agreed upon but with a lack of specificity and detail, Warr and Knapper (1968:24) go on to build a detailed schematic model of person perception, which in their own words, "... should apply equally to object perception." Cantor and Mischel (1979:8) support this notion by stating, "While people certainly differ from objects as stimuli, the categorization, rules and conceptual structures used in person and object perception may not be fundamentally different." For purposes of this study, it was therefore, assumed that object perception was fundamentally the same as person perception and hence, person perception models and explanations could be applied to object perception. Further, it was assumed that concept perception is similar to object and person perception.

After reviewing numerous models, this study accepted Warr and Knapper's (1968:20) model of perception as being appropriate because of the following reasons: (1) it represents all the aspects of perception that have been identified and advanced by the "Black Box" theorists, (2) they provide a comprehensive set of research findings to develop and substantiate each component of their model (credibility and acceptability), (3) comprehensiveness, (4) late 1970's and early 1980's personality research juxtaposes well with the Warr and Knapper scheme, and (5) it is appropriate for this study in that Warr and Knapper's schematic perception model underlies the semantic differential method of measuring attitudes, the Law of Comparative Judgement, the Least

Preferred Co-Worker Scale, and the organizational complexity research areas of this study, as well as explaining the response rate. Warr and Knapper's schematic model of perception is shown as Figure B.2.

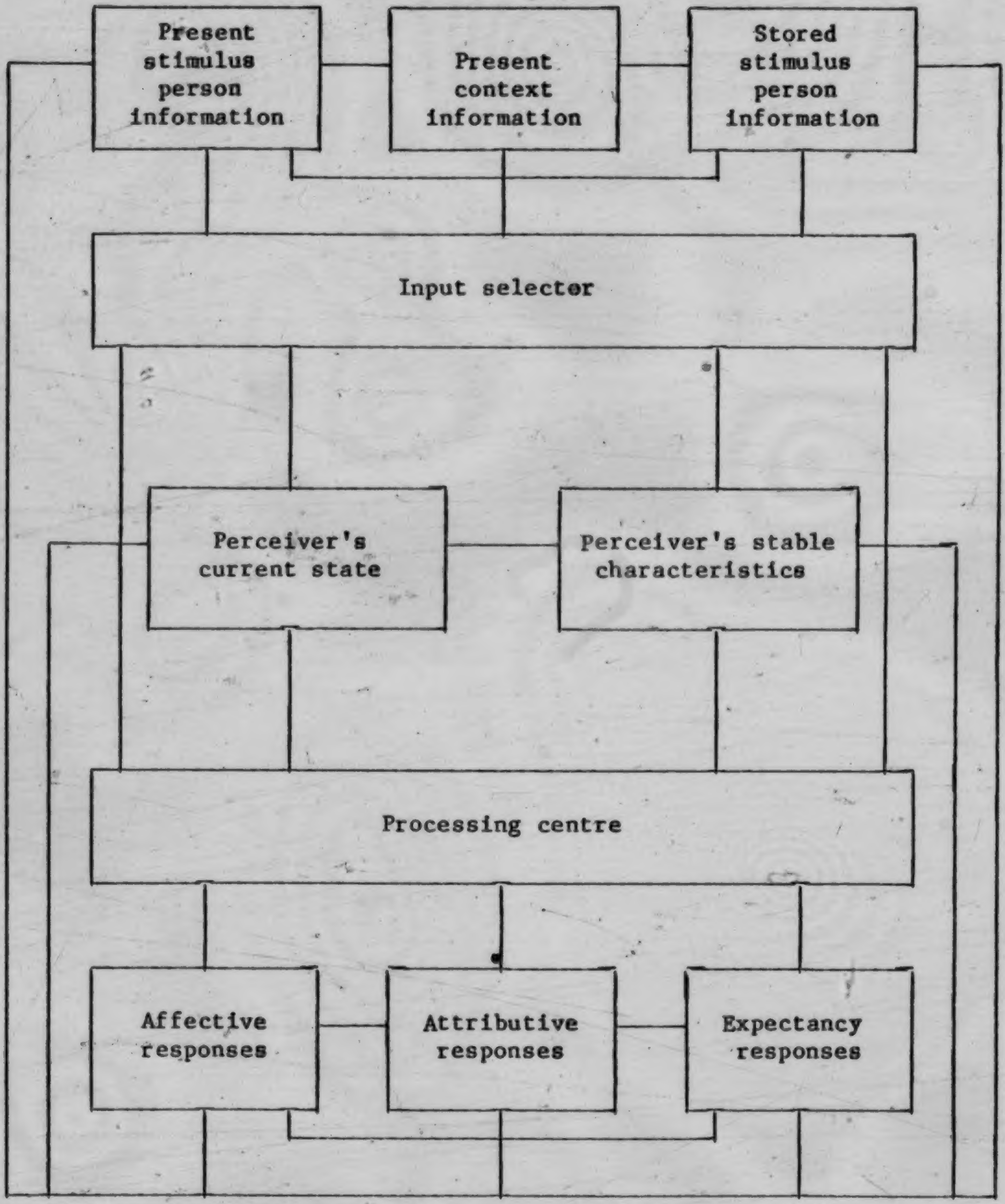

Present stimulus person information
Present context information
Stored stimulus person information
Input selector
Perceiver's current state
Perceiver's stable characteristics
Processing centre
Affective responses
Attributive responses
Expectancy responses

Figure B.2 Warr and Knapper's (1968) Schematic Representation of Person/Object Perception

Warr and Knapper's perception model will be described briefly to explain how respondent perceptions influenced their decision choices in the study questionnaire. Figure B.2 does not represent a sequential flow of information; instead, it represents a dynamic, interactive set of activities that may be instantaneous or extended in time. First, the perceiver receives at least three types of information: (1) present stimulus, (2) present context, and (3) stored stimulus information.

1. Present Stimulus Information. A necessary condition for perception to take place, state Warr and Knapper (1968:353) is that once the stimulus appears, the perceiver selects some information about the stimulus. As a result of their research, Kraut and Poe (1980:796) concluded that the characteristics of the stimulus, "... may be powerful predictors of judgements across situations and judgement tasks." In the context of this study, each questionnaire item required the respondent to select information from the perceived meaning of each question. If no information was selected then no perceptual process took place and hence, no response provided.

2. Present Context Information. This refers to the social, physical and behavioral aspect within which the object or person is perceived. The perceiver selects aspects from this context and these aspects are placed in juxtaposition with the selected information aspects of the stimulus. With regard to this study, the color of the questionnaire, the format and general appearance (physical) aspects could be selected. As well, the social, physical and behavorial aspects of the respondent (perceiver) would influence the perception process.

3. Stored Stimulus Information. This refers to the information available through a very circumscribed set of memory material within the perceiver about the stimulus. Wyer and Hartwick (1980:242) state that "When someone is asked to judge a person, object, or event, he is apt to search his memory for information relevant to this judgement." This variable, state Warr and Knapper (1968:358) should not be overlooked since, "The material in store is not simply retained in its pristine state ready for recall, but rather a few central impressions are available as an 'organized' setting within which we construct our idea ..." about the whole stimulus. Remembering, in this vein is the same as making a conceptual judgement. The perceiver begins to give meaning to the stimulus and hence the respondent's attitude structure begins to surface (relationship to attitude measurement and meaning which will be defined later).

Some examples of the type of information respondents may have stored are: knowledge about HRA concept, experience in measuring motivation, satisfaction, etc, information about earlier questionnaires, information about the sender of the questionnaire and information about thesis requirements of graduate programs.

4. Input Selector. The input selector stage refers to the selection of only certain aspects of the above three types of information. Wyer and Hartwick (1980:242) indicate the type of information retrieved is likely to be dependent upon the nature of the object to be judged, the time available for making it and the importance of the judgement. Cohen (1981:441) adds, "... a perceiver's prior

knowledge serves to structure and reduce the flow of incoming information." The perceiver is viewed by Cohen (1981:441), "... as an active processor whose social knowledge in the form of 'schemas', 'prototypes', or 'categories' may affect his or her encoding, storage, or retrieval of social information."

Of the examples given for the 3 types of information, any given respondent would select only certain aspects depending upon the time available, the importance of the judgement and completing the questionnaire to the perceiver (respondent) and the nature of the questionnaire. The input selector aspect may also help to explain why only 519 or 55.4% of the questionnaires were returned and why 96 out of 519 or 18.5% were unuseable; if a respondent was busy, perceived the nature of the questionnaire or any specific items (as stimuli) to be difficult and thought that it was not important, then that person would likely not complete it fully.

The next two components deal with the perceiver's stable characteristics and current state which influence the input selector as intervening linkages.

5. Perceiver's Stable Characteristics. This refers to characteristics of the perceiver such as personality attributes, cognitive style, age, beliefs, sex, attitudes, religious affiliation, occupation, self-perception, cultural background, ethnocentrism, needs, drives, social class, etc. that affect the input selector. Warr and Knapper (1968:195) state, "... the stable characteristics of a perceiver act upon the input selector by specifying types of judgements which are to be made as well as by alerting it to particular sets of cues." Specifically, personality is of great importance in object perception. Kolasa (1972:234) asserts, "... what we perceive depends a great deal on not what is out there but what we bring to the situation, our own needs, drives, or dispositions." Unfortunately, Kolasa (1972:233) adds, "Very frequently, the 'irrelevant' cues are those which prove to be of most importance." It is this component of perception that is significant to this study, since "attitude", as a stable characteristic of the perceiver (respondent), will influence the ultimate response on each questionnaire item, thereby allowing this study to determine the attitude of respondents toward HRA. Habit is also a strong element in the selective process; one person may habitually respond to certain cues, whether or not the cue is important for the response to the given stimulus.

Allen and Ebbesen (1981:140) point out that, "...if the attitude about which the subject was being asked was very consistent or very inconsistent with the overall representation, a response could be made immediately." However, they (Allen and Ebbensen 1981:140) point out further that, "... if the attitude which was being asked about was only moderately similar to the global representation, a memory search might occur ...." In other words retrieval of information from the "stored stimulus information is dependent upon the degree of consistency/inconsistency of the respondent's attitude; the greater the intensity or degree of consistency/inconsistency, the less information will tend to be retrieved from store. This finding has an interesting implication for this study and the general use of the SD instrument in that respondents who have strong positive or negative type of feelings (numbers 1, 2, 6 and 7 on the bipolar scale) retrieve little or no information from memory and hence likely made their judgement immediately.

6. Perceiver's Current State. This refers to the perceiver's temporary set or "Einstellung", his mood, his affective state that affects the input selector or the cues that are noticed. Current state, although similar to stable characteristics, differs in that the current state represents a transitory form of perceptual readiness while stable characteristics represents a more stable state of readiness. It should be noted that both of these conditions are present in only some judgements about stimuli (Warr and Knapper, 1968:362). In the instance of this study, the affective moods of the respondents indicated how they responded to the questionnaire, and consequently, their attitude toward HRA; it was assumed their responses accurately reflect their attitude.

7. Processing Center. This refers to the decision rules developed by the receiver. A decision rule, state Warr and Knapper (1968:117) is a, "...prescription based upon expected relationships between characteristics." Warr and Knapper (1968:163) indicated that two types of rules may be used in the processing center: inference and combination rules, i.e. rules that are used by the mind in classifying and categorizing information. Inference rules are those the perceiver uses when he is concerned with only a single input (in object perception, only one word or picture). Each perceiver has a large repertoire of inference rules, each suggesting (often unconsciously) what should be inferred from a single input item. However, input items are usually not singular and hence, the perceiver uses combination rules. Combination rules, state Warr and Knapper (1968:21) are "...prescriptions about inference from compound sets of individual inputs." Although the perceiver may use inference rules relevant to each input, he must also use combination rules based upon the inference rules which ultimately determine the output from the input. The perceptual judgements that respondents in this study have been asked to make are all group inputs and as such the respondents had to use combination decision rules in order to make their reponses.

In the instance of HRA attitudes, the group input regarding the "satisfaction" concept in the questionnaire consisted of at least three stimulus inputs: (1) measure, (2) satisfaction level, and (3) staff members. The respondents, therefore, used combination decision rules in determining, deciding or inferring their response to each of the 14 bipolar adjective pairs. The specific material processes that took place in the minds of respondents is truly a question of speculation!

Cook (1979:34-39) states two types of information are received and these two types have different decision rules or models: (1) information that all points in the same way, and (2) information that points in different directions. In terms of unidirectional information, information is treated either in an additive or averaging fashion. In terms of inconsistent information, Cook (1979:36-37) identifies seven strategies or models: (1) favorite cue or cues, (2) weighted or unweighted adding, (3) weighted or unweighted averaging, (4) linear regression, ie. ensuring same type of information is not counted twice, (5) single qualifying cue (ex. criminal record), (6) multiple cut-off (setting minimums for each cue) and (7) configural judgements (combination of 5 and 6). In the instance of this study, respondents were asked to indicate their feelings about 10 different concepts by selecting among 14 bipolar adjective pairs (inconsistent information) i.e. information that points in different directions. Respondents likely had to use combination/inconsistent information decision rules in their perceiving process.

Bruner (1964:231-244) explained the "processing center" concept in terms of what Osgood (1964:) called "perceptual readiness." He (Bruner, 1964:231) stated that the processing involves, "... a process of categorization in which organisms move inferentially from cues to categorical identity." By categorization, Bruner (1968:234) means rules for classing objects as equivalent; these are the same as Warr and Knapper's (1968) and Cook's (1979) decision rules. This categorization process is silent and often unconscious.. The second feature of this process is that, "... the results of such categorizations are representational in nature", that is, "... what is perceived is somehow a representation of the external world (varyingly veridical)" (Bruner, 1968:231 and 228 respectively). Bruner (1968:236-244) identified four neural mechanisms that take place during processing: (1) grouping and integration, (the mediators of categorizing and its form of connectivity), (2) access ordering (the phenomena of differential threshold levels for various environmental events which involves search sets and probability estimates for coding of a category, (3) match-mismatch processes (guidance of cue search behavior), and (4) gating (filtering and sensory inhibition).

Categories or taxonomies, explain Cantor and Mischel (1979:13), provide, "... a system for dividing the perceived world (people, events, objects) into equivalence classes that vary in inclusiveness or category size." Cohen (1981:441) adds, "...the perceiver is an active processor whose social knowledge in the forms of 'schemas', 'prototypes', or 'categories" may affect his or her encoding, storage, or retrieval ...", and as such, "...a perceiver's prior knowledge serves to structure ... incoming information ..." Jones and Nisbett (1971:5) assert, " ... differing data prompt different attibutions." Milstein and Jennings (1973:68) add yet another reason for perceptual variation: stratification, ie., indivuals or groups who interact with one group or stratum, will perceive differently than individuals who interact with a different stratum.

As part of processing, the perceiver has general guiding principles that allow the center to transform its activities to develop coherent, consistent and patterned perspectives or structures with respect to the stimulus person or object (Warr and Knapper, 1968:363). In order to cope with complex information from the input selector, the processing center tends to form simplified structures which are then filtered or gated through various clusters of beliefs or cognitive maps. Halsti (1976:30) suggests that the beliefs which permeate these maps provide the perceiver with a means of organizing and making sense out of the array of signals so as to develop a coherent, simplified and patterned structure. Axelrod (1976:244) supports Halsti's claim by suggesting the decision maker (perceiver) employs a simplified image that is structurally easy to work with and then acts rationally within the context of the simplified image.

Based upon the above theories, one can assume the thinking process of the respondents of this study categorized the stimulus information coming from the input selector in such a way as to develop a simplified, consistent and patterned structure that could be used in making the necessary judgements. Cantor and Mischel (1979:44) add that, "The structure of objects does not exist all in the world or all in the head ..." but rather, "...there is an interaction process by which the perceiver's tendencies to build coherent, well-structured classes of objects interacts with the already existing partial structure of the external object world." Warr and Knapper (1968:363), alleged the available set of decision rules varies from perceiver to perceiver but as a whole these are organized around some systematic assumptions that lead to categorization and structure. Finally, Lord, Ross and Lepper (1979:2108) state that,

> Instead of viewing people as impartial, data-driven processors ... our models must take into account the ways in which intuitive scientists assess the relevance, reliability, representativeness, and implications of any given sample of data ...

Hence, Warr and Knapper's (1968) processing center component.

The final components of Warr and Knapper's (1968:20) model relate to three different, yet interrelated, types of responses: affective, attributive and expectancy responses. Warr and Knapper (1968:363) stated that, "In a sense of course, they are a single phenomenon--'the judgement'--but it is useful to separate them on pragmatic grounds ..." as has been the case for all ten components.

8. Attributive Responses. This refers to the results attained in the processing center from classifying, categorizing and comparing (discriminating) sets of categories, information from the input selector and processing that information within the perceiver's current state and stable characteristics. Most perception research deals with attribution theory. This is the way the perceiver derives meaning from what has been perceived, or in the words of Warr and Knapper (1968:7), "... what is perceived derives its meaning from the category in which it is placed and from the way this category is distinguished from other categories."

Cantor and Mischel (1979:18) add that meaning and hence judgement results from a "...hierarchial system of cluster representations, ranging from one in which each of the objects is represented as a single cluster to one in which all objects are grouped together as a single cluster." Bruner (1964:225) states that an organism responds to a stimulus "...by referring the input to some class of things or events". He (Bruner, 1964:226) further adds all perception is generic in the sense that whatever is perceived is placed in and achieves its meaning from a class of percepts with which it is grouped. Warr and Knapper

(1968:8) elaborate by writing, "... we are continually forming frames of reference which include dimensions relevant to each class of stimulus and within which judgements are made."

Attributive responses, state Warr and Knapper (1968:16) are always reducible to a set of attributive responses such as "likeable" and "unattractive" characteristics. In terms of this study, the respondents obviously made an attributive judgement of "good" or "bad", "soft" or "hard", etc., about each concept by classifying, categorizing and comparing (discriminating among) inputs and categories to which meaning was attributed from the hierarchial cluster or class of percepts with which it was grouped. No attempt was made to develop a probabilistic hierarchial set of percepts or categories for respondents.

9. Expectancy Response Component. This relates to a range of expectancies or predictions that are related to the attributive responses and are considered in making a judgement. In other words, perception is more than making judgements with regard to the categories or dimensions that a stimulus is placed in. Since the model is interrelative, expectancy is operative in all of the nine other components. Expectancy or prediction about any group of categories or classification"... may be treated as attitudinal structures within the perceiver's stable characteristics" (Warr and Knapper, 1968:24). As well, the current state could generate a set of more transitory expectancies.

Leavitt (1958:32) suggests individuals "... perceive what they think will help satisfy needs, ignore what is disturbing, and again, perceive disturbances that persist and exist." A key internal factor studied by Bruner, Kelley and Strickland (Zalkind and Costello, 1974:84) is set. Set theory avers that prior expectation, predisposition, or impression of a person strongly influences the perception one has of the real situation. Perceptual readiness, or the set results in "... a tendency to perceive what we expect to perceive" (Costello, 1972:234).

Some of the expectancies or predictions that respondents may have had are: (1) researcher expected the respondent to complete the questionnaire, (2) school board may want to implement the concepts in question or (3) respondent may sometime be doing a thesis. When these type of expectancies and predictions are juxtaposed with the attibuted categories ("good" or "bad" hierarchy), a judgement results.

10. Affective Response Component. This refers to the emotional way a perceiver responds to a stimulus. The response mechanism consists of a judgement about a category or class fit, prediction or expectancy about the stimulus and the way the perceiver feels about the stimulus. In affective response, a positive or negative evaluation enters into the judgement of the object/person/concept stimulus (Warr and Knapper, 1968:364) and as such is closely related to the attributive response. However, Warr and Knapper (1968:16) argue they are separate since the positive-negative evaluations are part of the perceiver rather than of the stimulus.

The affective response category is key in this study since respondents were asked to indicate their feelings through a selection of bipolar adjectives. Hence, judgements were made in terms of how they evaluated the stimulus, how they categorized the inputs and the expectations they had. Collectively, the reponses give an indication of a response tendency or attitude.

As can be seen from the foregoing explication of Warr and Knapper's (1968:22-23) perception model, "...it appears that the scheme meaningfully relates the various complicated activities that go together to constitute person (object, concept) perception." As such it does not provide a semantic definition or at best a quasi-operational definition since the scheme defines perception "in terms of what happens instead of in terms of what it is" (Warr and Knapper, 1968:23). To conclude the discussion on perception, Warr and Knapper, (1968:352) state:

> ... the best way to define complex processes such as perception is not to seek simple semantic equivalents but rather to picture in some detail what it is that people are thought to do when they perceive.

Their scheme is built on an aggregate set of assumptions. The main way to test the assumptions of the scheme is to determine whether the scheme works or not! It is the view of this researcher, that in the context of this study, Warr and Knapper's (1968) scheme of perception worked.

## ATTITUDE

An understanding of the concept of attitude is important in that this study deals largely with attitude measurement, analysis of differences in attitudes, drawing of conclusions and making behavioral inferences from the data.

Thorndike and Hagen (1969:24) stated that "...psychologists and educators have been interested in measuring in two general areas, what a person can do and what he will do." Measures of what a person can do deal with ability, i.e., evidence of what a person can do if he tries, while measures of what a person will do, deal with personality, i.e., indication of what a person will do, and of how he will respond to the events and pressures of life. Measures of ability divide into aptitude and achievement measures, while measures of personality divide into character, adjustment, temperament, interests and attitude variables. Attitude, therefore, is a variable of personality and as such is only a partial predictor of what the individual will do, of behavior, and of how a person will respond to the events and pressures of life. Osgood, Suci and Tannenbaum (1958:190) defined attitude as a predisposition to respond and "...implicit processes having reciprocally antagonistic properties and varying in intensity,"and as such, attitudes have both direction and intensity in semantic space.

Attitudes, stated Travers (1978:184), "...are complex structures underlying behavior that result in behavior related to the approach or avoidance of particular classes of objects or situations." Scott and

Cummings (1973:71) aver that attitudes, "...obviously refer to organismic or internal mediational processes as determinants of behavior." Rhine (1964:493) defined attitude, "... as a concept with an evaluative dimension." Nord (1972:3965), in quoting Secord and Backman define attitudes as, "... certain regularities of an individual's feelings, thoughts, and predispositions to act toward some aspect of his environment." Nord appears convinced that the cognitive (thought) and feeling components of attitude contribute greatly to behavior.

Further, Thorndike and Hagen defined attitude in several ways: " ... reactions for or against the people, the phenomena, and the concepts that make up society" (1969:28); "... tendencies to favor or reject particular groups of individuals, sets of ideas, or social institutions" (1969:382); and, "feeling of favorableness or unfavorableness toward some group, institution or propostion" (1969:644). All three of the Thorndike and Hagen definitions clearly indicated that attitude is a positive (for, favor and favorableness) or negative (against, reject, unfavorableness) feeling, tendency or reaction. Klausmeier (1961:254) defined an attitude as, " ... a learned, emotionally toned predisposition to react in a consistent way, favorable or unfavorable, toward a person, object or idea" and as such, the attitude influences the individuals acceptance or rejection of persons and things. Cantril (Rhine, 1964:488) stated that attitude is:

> ... a more or less permanently enduring state of readiness of mental organization which predisposes an individual to react in a characteristic way to any object or situation with which it is related.

Klausmeier (1961:255) related attitude to values and tastes or preferences by stating, "... there is no sharp dividing line or distinction between tastes or preferences, attitudes and values." The difference is in degree rather than in kind or type as illustrated by Figure B.3.

Peak (Scott and Cummings, 1973:67) defined attitude as, "... a hypothetical construct which involves organization around a conceptual or perceptual nucleus and which has affective properties." To this end, attitudes have referents, i.e., attitudes toward something and are affective reactions to that specific referent. Attitudes, contended Peak (Scott and Cummings, 1973:67), "... all share the properties of affect and organization around an object or a concept" but differ on properties such as the learned/unlearned character of the process, the degree of conscious awareness, existence or non-existence of a reality or time dimension, the complexity of the attitude, its duration and readiness for action. It is assumed that beliefs and feelings provide some basis for predicting related action and behavior as stated by Osgood, Suci and Tannenbaum (1958:198). In addition to the belief/feeling and action relationship, the belief or cognitive component is independent of the feeling or affect component. A person may have a very strong intellectual commitment toward some referent yet may not have strong feelings. As well, a person could have a weak belief and a strong feeling toward a certain matter.

| Comparison Factors as Continuums | Tastes or Preferences | Attitudes | Values |
|---|---|---|---|
| Stability | Temporary | Not Temporary, Nor Permanent | Permanent |
| Scope | Specific | Not Specific, Nor General | General |
| Subjectivity | External objects or events | Relationship Between Person and Event | Within Individual |
| Significance to Self | Peripheral | Not Peripheral, Nor Central | Central |
| Significance to Society | Low | Not Low, Nor High | High |

Figure B.3 Differentiation Among Tastes or Preferences, Attitudes and Values on Five comparison Factors as Developed by Klausmeier (1961:255).

Travers (1978:184-5) contended that attitudes have three main components: cognitive or belief, affect or feeling and action. The cognitive attitude component refers to the knowledge a person has about the class of objects or referent toward which the person has an attitude. This results in a belief by the person toward the referent; this information or knowledge forms the basis for the attitude. The affect or feeling component refers to the way a person feels about the referent, while the action component refers to the readiness for action that may stem from the attitude.

Peak (Scott and Cummings, 1973:67) rejected the "readiness for action" component identified by Travers for, "... an attitude should not be expected to serve as an adequate basis for predicting all behavior, since it is rarely more than one of several components of motive structure." However, there is an inconsistency in Peak's assertion for while she rejects the "readiness for action" component, she implies that attitude may provide a basis for some behavior by stating that attitude cannot serve as a basis for predicting all behavior. Travers (1978:185) on the other hand, observed that while the relationship between belief, feeling and related actions is weak, beliefs and feelings are nevertheless important for the establishment of actions. Osgood, Suci, and Tannenbaum (1958:198) asserted that the "rejection of the readiness for action" argument is much overdrawn and as such claim attitude scores indicate simply, "... a disposition toward certain classes of behaviors, broadly defined, and that what overt response actually occurs in real life situation depends upon the context provided by the situation." The important concept is that "... the attitudinal disposition itself accounts for only part of the intervening state which mediates between situations and behaviors, albeit perhaps the dominant part" (Osgood,Suci and Tannenbaum, 1958:198). Secord and Backman (Nord, 1972:39), observed that Festinger's theory of cognitive dissonance, "... has the great merit of linking attitude to overt behavior."

There are numerous explanations and definitions of attitude. Rhine (1964:486), in reviewing numerous definitions observed that, "No one definition seems clearly superior solely on logical grounds; if it were otherwise, there would not be so many alternatives." In attempting to accept or prepare an appropriate definition a researcher, "... seeking a guide for his research among many alternatives, looks for a construct with heuristic and predictive value, particularily a construct which leads to informative research" (Rhine, 1964:487). The research philosophy of operationalism provides an important thesis regarding operational definitions, "There is an important relationship between the meaning of a term and the instruments and procedures that one would use to see whether the term applies to a particular situation and, if so, how. (Ennis, 1973:651). The most rigorous approach to providing an operational definition, adds Ennis (1973:651), is through "...providing implication relationships among operations, observations and the concept in question." Hence, the definitions of Osgood, Suci and Tannenbaum (1958:189-199) and Travers (1978:184-5) are used to provide an operational definition of attitude since they relate the instrumentation and procedures of this study well to the concept in question and the expected observations.

In order to build the appropriate operational definition, certain recurring themes in the above noted definitions need to be identified. By examining the key common traits of the given definitions, the following operational definition was designed for use in this study:

> **An attitude, which consists of 3 aspects (cognitive belief, feeling and action), is a reciprocal antagonistic feeling, predisposition or belief toward a sign, person, concept or object represented in semantic space which involves some form of internal mediation process and results in a tendency or disposition toward a certain response, action or behavior.**

One way to test the acceptability of the above definition is to compare its elements to the definitions cited in the literature as demonstrated in Figure B.4.

A review of Figure B.4 clearly shows that all elements of the operational definition of attitude have a base in the literature. The given operational definition is robust since it implies the following operations - observations - concept relationships: the semantic differential instrument for measuring attitude relates to the definition of attitude; the SD provides a procedure for converting data to observations and finally the definition has a concept as a referent, which in this instance is HRA. As well, this definition of attitude relates to the perception model presented in the previous section. Further, Nord (1972:396) declares, as has been suggested in the above operational definition, "It is generally believed that the outward effect of attitudes is to induce or inhibit behavior." In this study, the belief, cognitive or thought component of attitude was indicated through the evaluative dimension of the SD while the feeling or affect component (strength of attitude) was indicated through the potency dimension of the SD instrument. Therefore, behavior is predictable when one can accurately measure and fully understand the cognitive (thought, belief) and affect (feeling) portions of attitude. Nord (1972:396), in discussing the behavioral aspects of attitudes added, "Furthermore, a full understanding of attitudes requires measurement of the two internal components, feelings and thoughts, which may not be communicated accurately." Consequently, as a result of ascertaining the attitude and strength of attitude of various groupings of educational administrators, this study predicted or made inferences in Chapter Seven regarding potential behavior or response tendencies of respondents with respect to the assumed implementation of HRA.

| | Operational Definition Elements of Attitude | | | | | |
|---|---|---|---|---|---|---|
| Cited Definitions | Cognitive/ Feeling aspects | Reciprocal property (bipolar) | Toward sign | Seman. space | Inter. med. proc | Behavior Response Tendency |
| Osgood | - | X | - | X | X | X |
| Travers | X | X | X | - | - | X |
| Scott & Cummings | - | - | - | - | X | X |
| Rhine | - | - | - | X | - | - |
| Thorndike & Hagen | X | X | X | - | - | X |
| Klausmeier | X | X | X | - | - | X |
| Cantril | X | - | X | - | X | X |
| Peak | X | - | X | - | X | X |
| Travers | X | - | X | - | - | X |
| Nord | X | - | X | - | - | X |
| Total (10) | 7 | 4 | 7 | 2 | 4 | 9 |

Figure B.4 Comparison of the Elements of the Developed Operational Definition of Attitude to 10 Definitions as Cited From the Literature.

# APPENDIX C

## QUESTONNAIRE DISTRIBUTION, RESPONSE RATE AND DEMOGRAPHICS OF FINAL STUDY

## QUESTIONNAIRE DISTRIBUTION AND RESPONSE RATE OF FINAL STUDY

As indicated in Chapter Three, the population studied was all principals, secretary-treasurers and superintendents functioning in Alberta schools in November, 1976 except those in the public and separate school systems of Edmonton and Calgary. For questionnaire distribution purposes, the Alberta Education "List of Operating Schools in Alberta: 1975-76", the September, 1976 Alberta "List of Alberta School Jursidictions" and the September 1, 1976 Alberta Education list of "Locally Appointed Superintendents" were utilized. Those three lists were also used for recording and controlling returns and follow-up requests. Table C.1 summarizes the mail distribution, the useable and unuseable original returns, the useable and unuseable follow-up returns, and useable and unuseable overall returns, while Table C.2 compares the overall useable and unuseable returns to the mail distribution by principals, secretary-treasurers and superintendents. District type, district number and school code numbers were used to follow-up with respondents who left a few incomplete sections.

Table C.1 reveals that out of 937 questionnaires distributed (adjusted distribution), 722 or 77.1% went to principals, 130 or 13.9% to secretary-treasurers and 84 or 9.0% to superintendents. The original distribution was adjusted from 1031 to 937 because five original respondents stated they were unable to complete the questionnaire since the school was either a one or two teacher school. As a result, 94 one and two room "principals" were eliminated from the population. Five weeks after the original mailing on November 5, 1976, 457 or 48.8% of the questionnaires were returned; on December 13, 1976, 349 follow-up requests were forwarded. Follow-up requests were sent to all secretary-treasurers and superintendents that had not returned the questionnaire. Because of the enormous expense and time involved in sending follow-up requests to 354 principals only 223 were forwarded through random selection (follow-up request was sent to every odd numbered principal that had not returned a questionnaire following one that had).Table C.1 reveals only 62 out of 349 or 17.8% of the respondents involved in the follow-up submitted their questionnaires; this effort increased the overall response rate by only 6.6%.

While the overall response rate was 519 or 55.4%, the number of useable questionnaires was only 423 or 45.1%. It is interesting to note that the return rate by all three groups was quite varied (55.8%, 81.2% and 36.2% for principals, superintendents and secretary-treasurers respectively - a range of 45%) while the unuseable rates varied much less (range of 31.6%) because the unuseable rate tended to be in reverse to the return rate. It appeared that non-certificated educational administrators tended not to return the questionnaire, but if they did they completed the questionnaires more carefully and completely. In contrast, the response rate for superintendents, as a result of the follow-up requests, was almost twice that of the principals and secretary-treasurers; 15.7, 18.9 and 27.8 precent respectively.

The 55.4% response rate was 14.6% lower than the expected 70%

Table C.1 Mail Distribution, Follow-up and Useable and Unuseable Return of Questionnaires

| Category | Principals | | Sec.-Treas. | | Superin. | | Sub-Total | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | % |
| Original Distribution | 816 | 79.1 | 130 | 12.6 | 85 | 8.3 | 1031 | 100.0 | |
| Adjusted Distribution | 722 | 77.1 | 130 | 13.9 | 85 | 9.0 | 937 | 100.0 | 100.0 |
| Original Returns | 368 | 80.5 | 40 | 8.6 | 49 | 10.7 | 457 | 100 | 48.8 |
| Useable | 294 | 64.3 | 29 | 6.3 | 46 | 10.1 | 369 | 80.7 | 39.4 |
| Unuseable | 74 | 16.2 | 11 | 2.3 | 3 | 0.6 | 88 | 19.3 | 9.4 |
| Follow-Up Requests | 223 | 63.9 | 90 | 25.8 | 36 | 10.3 | 349 | 100.0 | 37.2 |
| Follow-Up Returns | 35 | 56.5 | 7 | 11.2 | 20 | 32.3 | 62 | 100.0 | 6.6 |
| Useable | 31 | 50.0 | 14.9 | 22.6 | 9 | 14.5 | 54 | 87.1 | 5.7 |
| Unuseable | 4 | 6.5 | 3 | 4.8 | 1 | 1.6 | 8 | 12.9 | 0.9 |
| Overall Return | 403 | 77.6 | 47 | 9.1 | 69 | 13.3 | 519 | 100.0 | 55.4 |
| Useable | 325 | 62.6 | 43 | 8.3 | 55 | 10.6 | 423 | 81.5 | 45.1 |

rate. As well, the 18.5% unuseable rate was quite high; mostly due to incomplete responses. Two major reasons may account for the relatively low response rate and high unuseable rate. The first is the general complexity of the questionnaire. People tend to fully complete and return a questionnaire when they feel they understand the underlying intent of the questionnaire. Because it is difficult to understand the underlying intent of the SD, the respondents may have felt anger and frustration. Second, school administrators receive many research questionnaires annually and hence may tend to neglect completing many questionnaires. Neverthless, the fact that 44.6% or 418 out of 937 administrators did not respond reveals that the final set of respondents simply represents a 55.4% sample of the population studied.

Table C.2 Comparison of Overall Useable and Unuseable Returns to the Mail Distribution of Questionnaires

| Administrative Position | Adjusted Distribution | | Returned | | Useable | | Unuseable | | Non-Returns | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Principals | 722 | 77.1<br>100.0 | 403 | 43.0<br>55.8 | 325 | 34.7<br>45.0 | 78 | 8.3<br>10.8 | 319 | 34.1<br>44.2 |
| Superintendents | 85 | 9.0<br>100.0 | 69 | 7.4<br>81.2 | 55 | 5.9<br>64.7 | 14 | 1.5<br>16.5 | 16 | 6.5<br>18.8 |
| Sec-Treasurers | 130 | 13.9<br>100.0 | 47 | 5.0<br>36.2 | 43 | 4.6<br>33.1 | 4 | 0.4<br>3.1 | 83 | 4.0<br>63.8 |
| Total | 937 | 100.0 | 519 | 55.4 | 423 | 45.2 | 96 | 10.2 | 418 | 44.6 |

## DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Questionnaire items 1 to 8 dealt with demographic-type questions. Frequency and percentage distributions were calculated for each of these eight response categories of the acceptable (useable) questionnaires. Tables C.3 to C.7 and Figures C.1 and C.2 describe those demographic characteristics.

Table C.3 Frequency and Percentage Distribution of Respondents By Type of Administrative Position

| Type of Administrative Position | Frequency (#) | Percent (%) |
|---|---|---|
| Principal | 325 | 76.8 |
| Superintendent | 55 | 13.0 |
| Secretary-Treasurer | 43 | 10.2 |
| Total (N) | 423 | 100.0 |

Table C.3 showed that 325 of the 423 respondents (76.8%) were principals while 55 or 13.0% were superintendents and 43 or 10.2% were secretary-treasurers. As revealed by Table C.2, the useable response rate for all three groups was not as dissimilar as Table C.3 suggests, 45.0%, 64.7% and 33.1% for principals, superintendents and secretary-treasurers respectively. The real difference lies in the size of the potential respondents.

Table C.4 Frequency and Percentage Distribution of Respondents By District Type

| District Type | Frequency # | Percent % |
|---|---|---|
| County | 142 | 33.6 |
| Division | 152 | 35.9 |
| Public District | 59 | 13.9 |
| Separate District | 69 | 16.3 |
| Regional | 1 | 0.2 |
| Total (N) | 423 | 100.0 |

Table C.4 revealed that 152 or 35.9% of the 423 respondents administered in school divisions and 142 or 33.6% administered in county organizations. Only one respondent was from a regional organization.

Table C.5 dealt with geographical zone as ascertained from the district number which was to be completed by principals only. The purpose of this item was to assist in the recording and matching of returned questionnaires to the control list. The four digit number of each individual school corresponds to a geographical set of six provincial zones, and hence it is interesting to examine the response rate by geographical zone. Table C.5 illustrated a consistent trend; the four mid and northern zones responded proportionately higher than the percentage of questionnaires distributed to them - this was also true for responses to follow-up requests. The two southern zones, on the other hand, responded at a proportionately lower rate than the distribution to them.

An examination of Table C.6 revealed that 389 or 92% of 423 respondents were male. This can be illustrative of two phenomena; first, educational administration in an arena that is predominantly occupied by males, and/or females tend not to respond to questionnaires.

Figure C.1 illustrates more than half the respondents (247 or 58.4%) were between the ages of 31 and 45 years. Further, only 6 or 1.4% were between 21 and 25 while no respondents were less than 21 years of age. As well, only 36 or 8.5% were between the ages of 26 and 30. This type of profile is reasonable because administrative positions are normally attained as a result of successful teaching and other related experience.

Table C.7 showed that 62.6% or 265 of the 423 respondents had a Bachelor's degree while 107 or 25.3% had a Master's degree. Only 8 or 1.9% had a Ph.D while 43 or 10.2% had no formal university degree.

The experience profile, as demonstrated by Figure C.2, revealed

Table C.5 Frequency and Percentage of Questionnaire Distribution and Response of Principals by Geographical Zone

| Zone | Questionnaire Distribution (Principals Only) | | Useable Questionnaires | | Follow - Up Requests | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Sent | | Returned | |
| | # | % | # | % | # | % | # | % |
| 1 | 123 | 17.0 | 59 | 18.2 | 41 | 18.4 | 7 | 20.0 |
| 2 | 148 | 20.5 | 80 | 24.6 | 41 | 18.4 | 9 | 25.7 |
| 3 | 107 | 14.8 | 51 | 15.7 | 30 | 13.5 | 5 | 14.4 |
| 4 | 117 | 16.2 | 55 | 16.9 | 35 | 15.6 | 6 | 17.1 |
| 5 | 91 | 12.6 | 32 | 9.8 | 30 | 13.5 | 4 | 11.4 |
| 6 | 136 | 18.9 | 48 | 14.8 | 46 | 20.6 | 4 | 11.4 |
| Sub-Total | 722 | 100.0 | 325 | 100.0 | 223 | 100.0 | 35 | 100.0 |
| Supt/ Sec-Tres | 215 | | 98 | | | | | |
| Overall Total | 937 | | 423 | | | | | |

that the two largest experience factors are 11-15 and 16-20 years of experience, 89 people or 21.0% and 80 people or 18.9 percent respectively. Only 8 respondents or 1.9% have educational work experience that amounts to 36 or more years. Experience groupings 0-6, 7-20, 21-75 and 26-30 are almost equally distributed. The 11-20 years of experience bulge will likely have the long-term effect of reducing the chances for younger teachers to achieve administrative appointments.

Table C.6 Frequency and Percent Distribution by Sex

| Sex | Frequency # | Percent % |
|---|---|---|
| Male | 389 | 92.0 |
| Female | 34 | 8.0 |
| Total (N) | 423 | 100.0 |

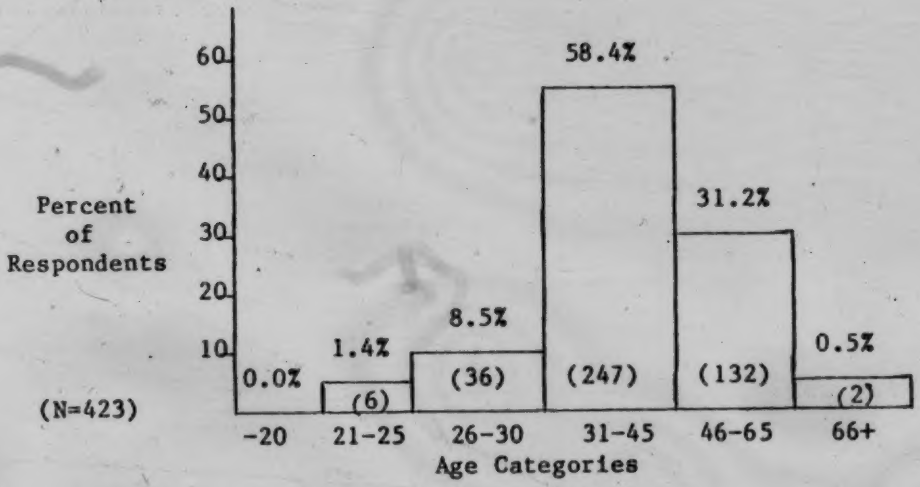


Figure C.1 Distribution of Age Categories of Final Study Respondents

Table C.7 Frequency and Percentage of Respondents By Formal Training

| Formal Training Level Attained | Frequency # | Percent % |
|---|---|---|
| Ph.D | 8 | 1.9 |
| Masters | 107 | 25.3 |
| Bachelors | 265 | 62.6 |
| None | 43 | 10.2 |
| Total (N) | 423 | 100.0 |

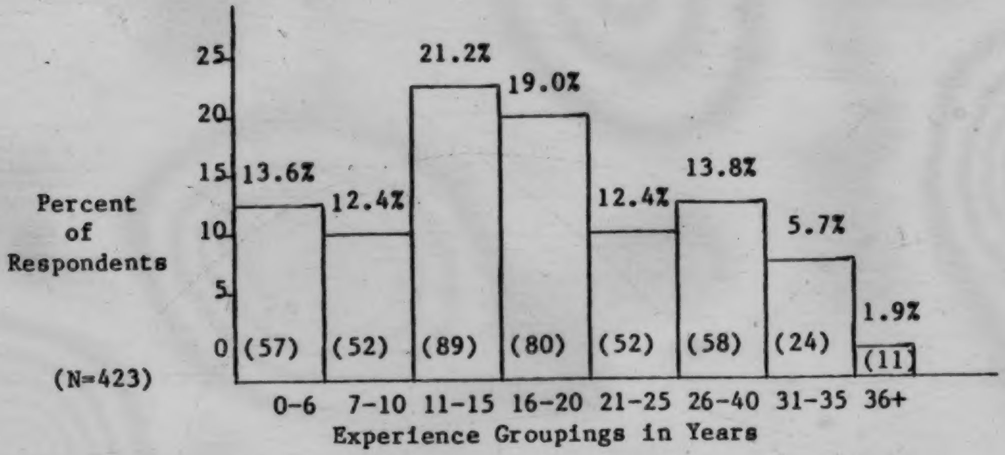


Figure C.2 Distribution of Final Study Respondents by Experience

# APPENDIX D

## DEMOGRAPHIC CHARACTERISTICS OF PHASE THREE PILOT STUDY RESPONDENTS

## DEMOGRAPHIC CHARACTERISTICS OF PHASE THREE PILOT STUDY RESPONDENTS

Tables D.1 to D.5 describe five demographic characteristics of the phase three pilot study respondents.

**Table D.1 Frequency and Percentage Distribution of Pilot Respondents by Type of Position**

| Type of Position | Frequency (3) | Percent (%) |
|---|---|---|
| Principal | 42 | 43.3 |
| Assistant Principal | 7 | 7.2 |
| Superintendent | 4 | 4.1 |
| Teacher | 17 | 17.5 |
| Department of Education | 24 | 24.8 |
| Unknown | 3 | 3.1 |
| Total | 97 | 100.0 |

**Table D.2 Frequency and Percentage Distribution of Pilot Respondents by Sex**

| Sex | Frequency (#) | Percent (%) |
|---|---|---|
| Male | 59 | 60.8 |
| Female | 12 | 12.4 |
| Unknown | 26 | 26.8 |
| Total | 97 | 100.0 |

**Table D.3 Frequency and Distribution of Pilot Respondents By Age Category**

| Age in Years | Frequency (#) | Percent (%) |
|---|---|---|
| Less than 21 | 0 | 0 |
| 21 - 25 | 2 | 2.1 |
| 26- 30 | 14 | 14.4 |
| 31 - 45 | 50 | 51.5 |
| 46 - 65 | 26 | 26.8 |
| Total | 97 | 100.0 |

2

Table D.4 **Frequency and Distribution of Pilot Respondents By Level of Formal Training**

| Training/Education | Frequency (#) | Percent (%) |
|---|---|---|
| Bachelor's | 57 | 58.8 |
| Master's | 12 | 12.4 |
| Ph.D. | 1 | 1.0 |
| Unknown | 27 | 27.8 |
| Total | 97 | 100.0 |

Table D.5 **Frequency Distribution of Pilot Respondents By Years of Educational Experience**

| Experience in Years | Frequency (#) | Percent (%) |
|---|---|---|
| 0 - 6 | 17 | 17.5 |
| 7 - 10 | 17 | 17.5 |
| 11 - 15 | 18 | 18.6 |
| 16 - 20 | 10 | 10.3 |
| 21 - 25 | 5 | 5.2 |
| 26 - 30 | 4 | 4.1 |
| Unknown | 26 | 26.8 |
| Total | 97 | 100.00 |

# APPENDIX E

## METHODOLOGY FOR CONVERTING COMPLEXITY CONFIGURATION TO A COMPOSITE COMPLEXITY MEASURE

## METHODOLOGY FOR CONVERTING COMPLEXITY CONFIGURATION TO A COMPOSITE COMPLEXITY MEASURE

A method for deriving at a weighted value for each of the three complexity determinants was required because it could not be assumed that each of the three determinants contributed equally to the measurement of complexity. Thurstone's Force Pair Comparison technique (Torgerson, 1965: 155-204), which is based on the Law of Comparative Judgement (Thurstone, 1959: 39-49), was used to determine the value of each determinant.

## LAW OF COMPARATIVE JUDGEMENT

The Law of Comparative Judgement, as described by Torgerson (1965: 159):

> "...is a set of equations relating the proportion of times any given stimulus k is judged greater on a given attribute than any other stimulus j to the scale values and the discriminal dispersions of the two stimuli on the pyschological continuum."

The Law of Comparative Judgement is based upon three postulates. When a subject or group of subjects have to respond to, ie. compare or judge a given stimuli (say vertical differentiation), they do so in relation to a psychological continuum that can be considered to be a continuum of subjective or psychological magnitudes (Torgerson, 1965:156). In order to compare or judge two or more stimuli,"...there must be some kind of process in us by which we react differently to the several specimens, by which we identify the several degrees of excellence or weight or gray value in the specimens" (Thurstone, 1959:39). This process, by which the organism identifies, distinguishes, or reacts to stimuli was labelled by Thurstone as the discriminal process. Hence postulate one, "Each stimulus when presented to an observer gives rise to a discriminal process which has some value on the psychological continuum of interest" (Torgerson, 1965:160).

The psychological scale, noted Thurstone (1959:40), is defined in terms of the frequencies of the discriminal process for any stimulus. If one specimen or stimulus seems more preferable or excellent than a second, then the two discriminal processes of the observer are considered to be different (Thurstone, 1959:156). Thus, as stated by Torgerson (1965:156), "...a given stimulus does not always excite the same discriminal process, but may excite one with a higher or lower value on the psychological continuum." Instead of having a single discriminal process for any given stimulus, there are a number of discriminal processes. Finally, Thurstone (1959:40), suggested the psychological scale is spaced off in such a way that the frequencies of the discriminal processes for any given stimulus form a normal distribution on the scale. Hence, postulate two, "Each stimulus thus has associated with it a normal distribution of discriminal processes" (Torgerson, 1965:159).

The discriminal process, claimed Torgerson (1965:157), "...most often associated with a given stimulus is defined as the modal discrimination process." The value of the modal discriminal process of a given stimulus can be taken as the scale value of the stimulus on the psychological continuum. The scale value of the stimulus can also be the value of the mean or medium discriminal process, since the mode, medium and mean are the same in a normal distribution. The discriminal deviation is the "...separation on the scale between the discriminal process for any given stimulus on any particular occasion and the modal discriminal process for that stimulus" (Thurstone, 1959:40). In turn, the standard deviation of the distribution of discriminal processes on a scale for any given stimulus is called the discriminal dispersion of that stimulus. Hence postulate three, "The mean and standard deviation of the distribution associated with a stimulus are taken as its scale value and discriminal dispersion respectively" (Torgerson, 1965:160).

Thurstone's law of comparative judgement, "...thus postulates a psychological continuum upon which the values of the discriminal processes associated with each stimulus form a normal distribution" (Torgerson, 1965: 157). Figure E.1 depicts such a psychological continuum with distributions for three stimuli, 1, 2 and 3:

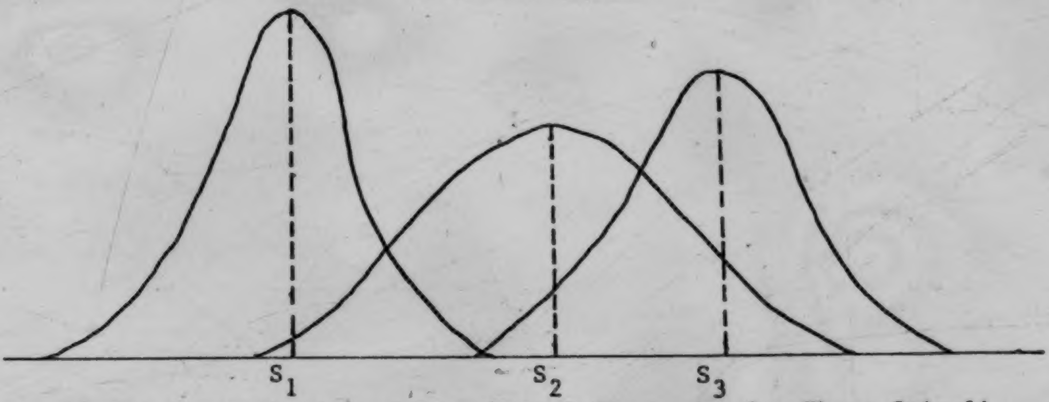


Figure E.1 Distribution of Discriminal Processes for Three Stimuli, $S_1$, $S_2$ and $S_3$ on the Psychological Continuum.

Figure E.1, demonstrates that the scale value for stimulus 1 is $S_1$, the scale value for stimulus 2 is $S_2$ and the scale value for stimulus 3 is $S_3$. However, since the respondent(s) cannot report the value of the discriminal process (the respondent simply chooses the stimulus which is higher on the psychological continuum), nor the frequency distribution, the stimuli must be scaled indirectly; the experimental procedure for obtaining empirical estimates of the proportion of times any one stimulus is judged greater than another stimulus is known as the method of paired comparisons (Torgerson, 1965: 166).

The discriminal dispersion concept is central to the determination of scale values for any set of stimuli. The difference in the scale between the discriminal processes of two stimuli involved in the same judgement is called the discriminal difference. Whenever the two stimuli are presented together a large number of times, the discriminal differences, when plotted on the psychological continuum would form a normal distribution. The mean of this distribution, according to Torgerson (1965: 160), "...is equal to the difference in scale values of the two stimuli, since the difference between means is equal to the mean of differences."

Further, the respondents must judge which stimulus is higher on the psychological continuum. Whenever the discriminal process for stimulus 1 is greater than for stimulus 2, it is assumed stimulus 1 is chosen over stimulus 2 in the judgement. If the comparative judgement of stimulus 1 is greater than stimulus 2, then the discriminal difference is positive; if the judgement of stimulus 2 is greater than stimulus 1, then the discriminal difference is negative. By using a large number of judgements, the proportion of times stimulus 1 is judged to be greater than stimulus 2 can be determined. Figure E.2 illustrates the distribution of discriminal differences on the psychological continuum.

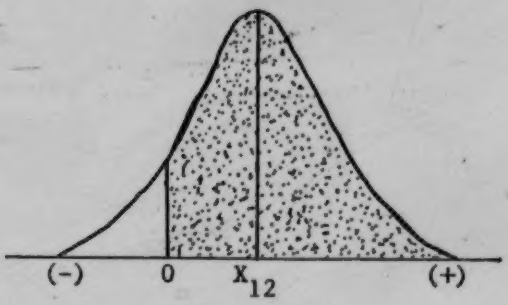


Figure E.2 The Distribution of Discriminal Differences on the Psychological Continuum.

The shaded section to the right of the zero point indicates the proportion of times stimulus 1 was chosen over stimulus 2 (positive discriminal difference), while the unshaded section to the left of the zero point indicates the proportion of times stimulus 2 was chosen over, or judged to be greater than stimulus 1 (negative discriminal difference).The mean of the distribution ($X_{12}$) is equal to the difference in scale values of stimuli 1 and 2 ($S_1 - S_2$) (Torgerson, 165-161). Hence, by using a table of areas under the unit normal curve, the difference of stimulus 1 and 2 can be calculated and the scale value derived.

In order to make the Law of Comparative Judgement solvable (many unknowns remain: independent correlations and zero point), Thurstone (1959:41-46) identified five and Torgerson (1965:163-166) three simplifying cases. Thurstone's Case 2 and Torgerson's Class II apply in this study: a group of subjects making judgements over a series of stimuli. Several assumptions underlie this model (Thurstone, 1959: 42-43) and (Torgerson, 1965:162):

1. the correlation between discriminal deviations is practically constant throughout the stimulus series.

2. all positive discriminal differences (a-b) are judged A>B and all negative discriminal differences (a-b) are judged A<B.

3. the discriminal processes associated with any given stimulus for a large number of respondents forms a normal distribution on the psychological continuum.

With the above three assumptions, the Law of Comparative Judgement can be used to derive the scale values for data collected from a group of respondents.

## FORCE COMPARISON TECHNIQUE

In the method of paired comparisons, each stimulus is paired with each other stimulus, ie. each stimulus serves as a standard for another stimulus. The three determinants of organizational complexity that required scaling were horizontal differentiation, vertical differentiation and spatial dispersion, thereby giving rise to three sets of paired comparisons.

Each of the three pairs had to be judged or compared by the respondents as to which member of the pair contributed more or was more important in determining the complexity of the organization. To be consistent with the derivation of the law, wherein the probability of a zero discriminal difference is vanishingly small, the respondents had to designate one of the pairs as contributing more to complexity; ie. no equality of judgements were allowed (Torgerson, 1965:167). Items 24, 25 and 26 on page three of the questionnaire provided the force pair comparison raw data.

It is often necessary to experimentally control those conditions that might introduce a biasing effect. Normally, exhorted Torgerson (1965: 168), these factors can be controlled by spatial or temporal assignments of each stimulus pair and the order of presentation. However, it appears that the biasing factor is significant only when the number of stimuli is five or more (Torgerson, 1965: 168). Hence, since there were only three stimuli pairs in this study, it was assumed that biasing would not take place. This assumption is supported further by integrating the stimuli pair into the questionnaire and by providing a definition for each stimulus. Further, the technique is permissive rather than coercive with respect to respondent selection and as such does not force transitivity on the data. Since the transitivity postulate is important in terms of internal consistency reliability, the issue was fully addressed in Chapter Five.

The method of paired comparisons requires three methodological steps in converting the raw data from the questionnaire: frequency matrix (F), proportion matrix (P), and a basic transformation matrix (X) of unit normal deviates. The F matrix gives the number of times a stimulus is chosen over another, while matrix P gives the proportion of times a stimulus was judged greater than another stimulus. Matrix X gives the theoretical value found in the law, ie., "... it gives an estimate of the difference between scale values of the two stimuli measured in units of the standard deviation of the distribution of discriminal differences" (Torgerson, 1965:170).

However, since the scale values ascertained through the Law of Comparative Judgement locates the given stimuli on the psychological continuum in relation to one another only, Torgerson (1965: 195) states that the zero point must be chosen either arbitrarily (linear transformation of the type, $y = ax + b$) or in relation to a rational zero point (linear transformation of the type, $y = ax$). The arbitrary zero is normally used for single-ended continua like pitch, loudness, brightness and saltiness, while the rational zero is used for double-ended continua (continua that progresses from one extreme to the opposite extreme through a zero or neutral point) such as esthetic, affective, attitude and personality-trait. The DERS Scaling 01 analytical package was used to transform the raw data into three scale values using a rational zero point approach.

Figure E.3 which reports the placement of the three complexity determinants on the double-ended psychological continuum, reveals that vertical differentiation was judged by the respondents to be the most important determinant of complexity (scale value of +0.921), while spatial dispersion was the least important (scale value of -1.390). The -1.390 scale value for spatial dispersion does not mean that spatial dispersion is unrelated to complexity, rather it represents a relative placement of spatial dispersion on the organizational complexity psychological continuum. In order to arrive at a more convenient set of determinant measures, the three scale values required the application of a transformation technique.

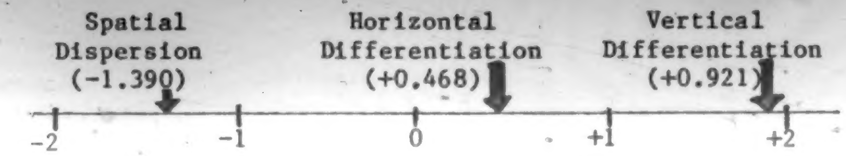


Figure E.3 Placement of the Three Determinants on the Organizational Complexity Double-Ended Psychological Continuum.

## TRANSFORMING SCALE VALUES

The scale values derived from the Force Pair Comparison technique were transformed using a linear transformation approach called the T-score. The purpose of a T-score transformation is to change a set of scores to another so that the meaning of these scores will be unambiguous (Horst, 1966:71). The algebraic formula for the T-score transformation is:

$$T = 10/\ x + (50 - 10\bar{x}/\sigma)$$

[illegible]

(0), and the scale value is denoted by x. As revealed in Table E.1, the standardized T-score, derived by a mathematical linear transformation, provides a more convenient, useful and meaningful set of measures than the original scale values.

Table E.1 Derived Scale Values, T-Scores and Converted Percentages for Each Complexity Determinant in the Final Study.

| Stimulus Number | Determinant | Derived Scale Value | T-Score | Converted Percent |
|---|---|---|---|---|
| 1 | V.D. | 0.921 | 59.21 | 39.48 |
| 2 | S.D. | -1.390 | 36.10 | 24.06 |
| 3 | H.D. | 0.468 | 54.68 | 36.46 |
| Total | | -0.001 | 149.99 | 100.00 |

Table E.1 indicates vertical differentiation was judged to account for about 39.48% of organizational complexity. Spatial dispersion was deemed to account for only 24.06% while horizontal differentiation accounted for about 36.46%. Figure E.4 demonstrates the proportionate amount that each determinant contributed to the overall measure of complexity.

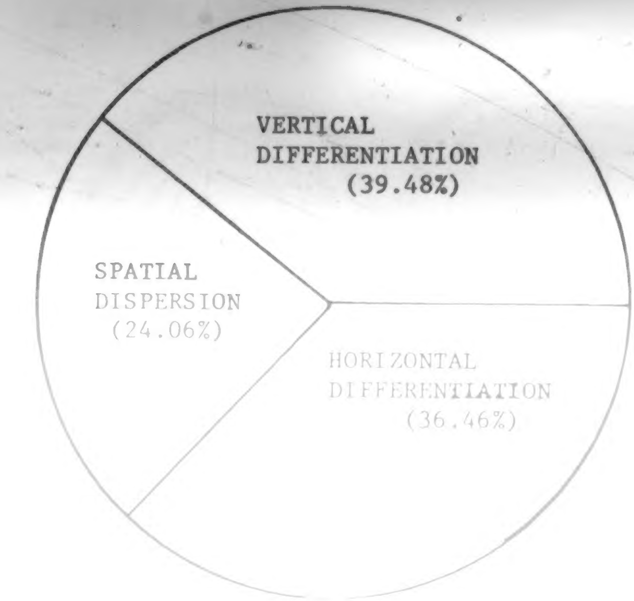


Figure E.4 Proportionate Contribution of Each of the Three Complexity Determinants to the Overall Measure of Organizational Complexity.

## DERIVATION OF THE COMPOSITE COMPLEXITY MEASURE

The standardized T-score was the value used in calculating the degree of organizational complexity for each respondent; that is, the actual configuration count for each organizational complexity determinant per respondent was multiplied by the appropriate standardized organizational complexity determinant scale value. In turn, the three individual complexity scores were summed to arrive at the composite or aggregate measure of complexity for each respondent. A specific illustration is provided in Table E.2.

Table E.2 Application of Complexity Determinants and Standardized Scale Values to Derive a Composite Measure of Complexity for Study Respondent 001.

| Determinant | Configuration Count | T-Score | Complexity Measure |
|---|---|---|---|
| V.D. | 9 | 59.21 | 532.89 |
| H.D. | 20 | 54.68 | 1093.60 |
| S.D. | 10 | 36.10 | 361.00 |
| Composite Measure | 39 | - | 1987.49 |

Using the above methodology, a composite measure of organizational complexity was calculated for each of the 423 respondents. A quality control measure was introduced in relation to the vertical differentiation determinant measure. If a respondent had indicated a zero for either test item 20 or 21 (number of position levels in the school and central office) then all three determinant responses were excluded from the composite measure; the reason being that since a response of zero was impossible, it was assumed the respondent did not understand the item. Twenty-five respondents were eliminated thereby leaving 398 respondents for inclusion in calculating an overall measure of complexity. The lowest complexity composite measure was 272.940, while the most complex was 3066.269.

The final mathematical application was the transformation of the composite measure, which was in thousands, into a measure of unity by dividing each composite measure by a thousand. This conversion resulted in the lowest composite measure becoming 0.273 and the most complex becoming 3.066.

In order to prepare the composite measure data for comparing attitudes and strength of attitudes, the 398 respondent scores were grouped into approximately three equal groups as shown in Table E.3.

Table E.3 Grouping of Final Study Administrators by Low, Medium and High Complexity Scores.

| Grouping | Composite Measure Range | Number of Respondents |
|---|---|---|
| Low | 0.273 - 0.901 | 132 |
| Medium | 0.903 - 1.364 | 136 |
| High | 1.378 - 3.066 | 130 |
| Total | 0.273 - 3.066 | 398 |

# APPENDIX F

## LETTER SOLICITING COOPERATION FROM PRINCIPALS, SECRETARY-TREASURERS AND SUPERINTENDENTS IN COMPLETING AND RETURNING QUESTIONNAIRES

THE UNIVERSITY OF ALBERTA

**Department of Educational Administration**
*EDMONTON, ALBERTA, CANADA T6G 2G5 TELEPHONE 432-5241*

November 5, 1976

Alberta School Principals
School System Secretary-Treasurers
Alberta School Superintendents

I am presently conducting a research study which is chiefly concerned with the feelings of educational managers towards various kinds of information. The study is a partial requirement for the degree of Doctor of Philosophy in Educational Administration at the University of Alberta, Edmonton. To this end, I am forwarding a questionnaire to Alberta school superintendents, secretary-treasurers and principals.

A copy of my questionnaire is enclosed and I ask that you complete it at your earliest convenience. I would appreciate receiving it by November 24, 1976. A stamped, self-addressed envelope is included for return of the questionnaire.

The return of the completed questionnaire is imperative for the continuation of my study; your assistance in this matter is greatly appreciated.

Yours sincerely,

John L. Myroon

John L. Myroon

# APPENDIX G

# FOLLOW-UP LETTERS TO PRINCIPALS, SUPERINTENDENTS, AND SECRETARY-TREASURERS NOT RETURNING QUESTIONNAIRE

**FACULTY OF EDUCATION**
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

**THE UNIVERSITY OF ALBERTA**
EDMONTON, CANADA
T6G 2E1

December 13, 1976

Alberta School Principals:

Re: RETURN OF MYROON RESEARCH QUESTIONNAIRE

On November 5, 1976 a research questionnaire was forwarded to your office in the hope that you would complete and return it to me in the stamped, self-addressed envelope that was provided. To date, I either have not received your questionnaire or it was returned with no identifying jurisdiction number.

The return of your completed questionnaire is crucial to the continuation of my study. Therefore, once again, I would like to kindly request your cooperation in completing the aforementioned questionnaire and return it by December 22, 1976.

If you have returned the questionnaire and yet receive this letter, it would be appreciated if you could complete the bottom section, and return it to me at:

8812 - 139 Avenue
Edmonton, Alberta
T5E 2B7

Once again, many thanks for your cooperation.

Sincerely,

John L. Myroon

J. L. Myroon

JLM/ls

---

I HAVE RETURNED YOUR QUESTIONNAIRE

School Code Number ☐☐☐☐

**FACULTY OF EDUCATION**
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

**THE UNIVERSITY OF ALBERTA**
EDMONTON, CANADA
T6G 2E1

December 9, 1976

School System Secretary-Treasurers

Dear

Re: RETURN OF MYROON RESEARCH QUESTIONNAIRE

On November 5, 1976 a research questionnaire was forwarded to your office in the hope that you would complete and return it to me in the stamped, self-addressed envelope that was provided. To date, I either have not received your questionnaire or it was returned with no identifying jurisdiction number.

The return of your completed questionnaire is crucial to the continuation of my study. Therefore, once again, I would like to kindly request your cooperation in completing the aforementioned questionnaire and return it by December 22, 1976.

If you have returned the questionnaire and yet receive this letter, it would be appreciated if you could complete the bottom section, and return it to me at:

8812 - 139 Avenue
Edmonton, Alberta
T5E 2B7

Once again, many thanks for your cooperation.

Sincerely,

John L. Myroon

J. L. Myroon
Planning Consultant

JLM/ls

---

I HAVE RETURNED YOUR QUESTIONNAIRE

a. Type of Jurisdiction ______________________________

b. Number of Jurisdiction ____________________________

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA
T6G 2E1

December 9, 1976

Alberta School Superintendents

Dear

Re: RETURN OF MYROON RESEARCH QUESTIONNAIRE

On November 5, 1976 a research questionnaire was forwarded to your office in the hope that you would complete and return it to me in the stamped, self-addressed envelope that was provided. To date, I either have not received your questionnaire or it was returned with no identifying jurisdiction number.

The return of your completed questionnaire is crucial to the continuation of my study. Therefore, once again, I would like to kindly request your cooperation in completing the aforementioned questionnaire and return it by December 22, 1976.

If you have returned the questionnaire and yet receive this letter, it would be appreciated if you could complete the bottom section, and return it to me at:

8812 - 139 Avenue
Edmonton, Alberta
T5E 2B7

Once again, many thanks for your cooperation.

Sincerely,

John L. Myroon

J. L. Myroon

JLM/ls

---

I HAVE RETURNED YOUR QUESTIONNAIRE

1. Type of Jurisdiction ____________________

2. Number of Jurisdiction ____________________

# APPENDIX H

# STAGE ONE PILOT QUESTIONNAIRE

## GENERAL INTRODUCTION TO THIS QUESTIONNAIRE

### (Phase One)

The purpose of this questionnaire is to ascertain the meanings of certain things to various people by having them judge these things against a series of descriptive adjective pair scales. All responses are to be made within this booklet - there are no separate answer sheets.

Each questionnaire that is completed will remain anonomous, thus full confidentiality is ensured. There is no need to place your name or any other form of identification on the questionnaire.

The questionnaire is divided into four separate sections. Please follow the instructions given for each section. Section one asks you to give your feelings regarding certain kinds of information while section two asks you to express your feelings regarding a particular kind of person. Section three simply asks for some demographic data.

In advance, I would sincerely like to thank you for taking some precious time from your busy schedule to complete the questionnaire. I know that it is asking a great deal at this busy time of year, for I too, have faced the demands expected of your position - but I know that I can count on you. Further, I do hope that some day I might be able to return the favor.

## TO THOSE HELPFUL PEOPLE WHO ARE WILLING TO ASSESS THIS INSTRUMENT

Thank you kindly for your time and suggestions. It would really be appreciated if you could assess the questionnaire generally, and in reference to the following:

1. Is the triggering concept, ie., description of type of information, clear and understandable to you? Will it be clear to the people who will be completing the questionnaire (principals, superintendents, assistant supt., and secretary- treasur Do they trigger sufficient feeling to respond to the scales?
2. Look at each scale independently of the others. Is each scale relevant to expressing a feeling about the given kind of information? If not, please stroke out that adjective pair.
3. Are there other appropriate adjective pairs? If so, what are they?
4. Do you think the instrument is getting at feelings or attitudes toward certain kinds of information as specified? If not, what could be done to measure such feelings?
5. Are the instructions clear enough? Where are they unclear?
6. All and any other comments, suggestions, etc. would be greatly appreciated.
7. IS SECTION 3 a VALID method or way for determining complexity of an org. ?

PLEASE RETURN THIS QUESTIONNAIRE ALONG WITH ALL YOUR ASSESSMENT COMMENTS ON IT TO ME (John Myroon) or to ROOM 130E, 7 Floor, Ed. Blg. II.

ONCE AGAIN, THANK YOU for helping a "fellow in need".

## SECTION ONE

GENERAL: For purposes of answering this section, assume that you, as the principal, assistant superintendent, secretary-treasurer, or superintendent of your school or school jurisdiction have been receiving or are about to receive various types of information from the school jurisdiction's Management Information System for regular day to day and long--term decision making. DO NOT worry or consider how often you receive these reports - assume you receive them at time intervals agreeable to you.

The purpose of this section is to give you the opportunity to express your feelings or impressions about different kinds of information on management reports - which you are assumed to be receiving for your managerial use.

SPECIFIC INSTRUCTIONS:
You are asked to consider the type of information that could be received in a report, which is stated at the top of each of the following pages and then to indicate your feelings or impressions about that type of information in relation to each of the adjective pairs listed beneath each type of information.

Indicate your response by circling the appropriate number.

Here is how you use these adjective pair scales:

If you feel that the type of information at the top of the page is very closely related to one or the other end of the scale, then you should circle the number as follows:

FAIR [✓ 1] 2 3 4 5 6 7 UNFAIR

OR

FAIR 1 2 3 4 5 6 [✓ 7] UNFAIR

If you feel that the type of information is quite closely related to one or the other end of the scale (but not extremely), then you should circle the number as follows:

STRONG 1 [✓ 2] 3 4 5 6 7 WEAK

OR

STRONG 1 2 3 4 5 [✓ 6] 7 WEAK

If you feel the type of information given at the top of the page is only slightly related to one side as opposed to the other side (but not really neutral), then you should circle the appropriate number as follows:

ACTIVE 1 2 [✓ 3] 4 5 6 7 PASSIVE

OR

ACTIVE 1 2 3 4 [✓ 5] 6 7 PASSIVE

The direction toward which you circle a number, of course, depends upon which of the two ends of the scale seems characteristic of the thing you are expressing your feelings about.

If, on the other hand, you feel that the type of information is neutral or it does not suggest any feeling in either direction of the scale, or if both sides of the scale are equally associated with the type of information, or if the scale seems completely irrelevant, then you should circle number four, as follows:

SAFE 1 2 3 [✓ 4] 5 6 7 DANGEROUS

Make each scale a separate and independent judgement.

Work at a fairly fast rate - 5 seconds per scale is generally sufficient. Do not worry or puzzle over individual items. Do not look back and forth through the items. Do not try to remember how you responded to similar items earlier.

It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

QUESTIONNAIRE CONTINUES ON NEXT PAGE

[illegible]

paper, blank cassette tapes, [illegible] tion, etc.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| GOOD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | BAD |
| BEAUTIFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UGLY |
| SWEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOUR |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS |
| NICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | AWFUL |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS |
| DIRTY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | CLEAN |
| TASTY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DISTASTEFUL |
| CRUEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | KIND |
| PLEASANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNPLEASANT |
| BITTER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SWEET |
| HAPPY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SAD |
| FOUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FRAGRANT |
| FAIR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNFAIR |
| HEALTHY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SICK |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY |
| VOLUNTARY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | COMPULSORY |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC |
| SMALL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LARGE |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SMALL |
| WEAK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | STRONG |
| DEEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SHALLOW |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT |
| LOUD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT |

[illegible]
individual skills and competencies

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GOOD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | BAD |
| BEAUTIFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UGLY |
| SWEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOUR |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS |
| NICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | AWFUL |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS |
| DIRTY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | CLEAN |
| TASTY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DISTASTEFUL |
| CRUEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | KIND |
| PLEASANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNPLEASANT |
| BITTER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SWEET |
| HAPPY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SAD |
| FOUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FRAGRANT |
| FAIR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNFAIR |
| HEALTHY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SICK |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY |
| VOLUNTARY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | COMPULSORY |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC |
| SMALL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LARGE |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SMALL |
| WEAK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | STRONG |
| DEEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SHALLOW |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT |
| LOUD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT |

[illegible]
staff members.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GOOD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | BAD |
| BEAUTIFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UGLY |
| SWEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOUR |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS |
| NICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | AWFUL |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS |
| DIRTY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | CLEAN |
| TASTY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DISTASTEFUL |
| CRUEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | KIND |
| PLEASANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNPLEASANT |
| BITTER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SWEET |
| HAPPY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SAD |
| FOUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FRAGRANT |
| FAIR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNFAIR |
| HEALTHY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SICK |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY |
| VOLUNTARY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | COMPULSORY |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC |
| SMALL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LARGE |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SMALL |
| WEAK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | STRONG |
| DEEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SHALLOW |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT |
| LOUD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT |

[illegible] types of information triggering concepts. [illegible] below:

TYPE OF INFORMATION: Recruitment costs for your staff are broken down by principal's time and expenses, superintendent's time and expenses, telephone, .etc.

TYPE OF INFORMATION: A measured satisfaction level of each of your staff members.

TYPE OF INFORMATION: Staff recruitment and professional development costs are to be amortized over a period of three or more years rather than entering these costs as regular expenses in the annual budget.

TYPE OF INFORMATION: A measured leadership style of all administrators

TYPE OF INFORMATION: A measured productivity factor of each staff member.

TYPE OF INFORMATION: A measured inventory of your staff's attitudes toward yourself, your organization, students, instructional styles, the community, educational philosophies, the school board, etc.

TYPE OF INFORMATION: Amounts and costs of capital equipment like typewriters, calculators, parallel bars, etc.

SECTION TWO : This section will be the well renown LPC instrument.

SECTION THREE: ORGANIZATIONAL COMPLEXITY: The complexity of an organization can be determined by considering, in combined fashion, the degree of task specialisation (# of departments), amount of hierarchial levels in the system and number of schools. Indicate the complexity of your organization on the following scale by circling the appropriate nember:

| VERY LITTLE | SOMEWHAT | VERY | EXTREME |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

SECTION FOUR: This section will request regular demographic data.

# APPENDIX I

# STAGE TWO PILOT QUESTIONNAIRE

# SURVEY OF FEELINGS TOWARDS VARIOUS KINDS OF INFORMATION

**MAJOR PURPOSE**: The major purpose of this questionnaire is to ascertain the feelings of people toward various kinds of things by having you express or indicate your feelings through a series of descriptive adjective pair scales.

**GENERAL DIRECTIONS**: All responses are to be made within this booklet - there are no separate answer sheets. There is no right or wrong answer. Each questionnaire will definitely remain anonymous, thus full confidentiality is ensured - the school code number (used by the Department of Education) or the district number (for respondents other than principals) is requested for the purpose of follow-up requests.

The questionnaire is divided into four sections. Please follow the instructions for each section.

Please indicate the number of your school (if you are a principal), or the number of the district, and district type (all others)

SCHOOL NUMBER ________
(or)
DISTRICT TYPE AND NUMBER ________

Do not write in this space

cc

ID ☐☐☐ CARD 1

## SECTION ONE - GENERAL INFORMATION

**INSTRUCTIONS**: Please answer by circling the appropriate number to the right of each question.

1. Your sex is — 5

| | |
|---|---|
| Male | 1 |
| Female | 9 |

2. Your age is — 6

| | |
|---|---|
| Under 21 | 1 |
| 21-25 | 2 |
| 26-30 | 3 |
| 31-45 | 4 |
| 46-65 | 5 |
| Over 65 | 6 |

3. Your highest level of training (completed degree) is — 7

| | |
|---|---|
| Bachelors | 1 |
| Masters | 2 |
| Doctorate | 3 |

4. Your present years of experience in education is 8

Under 6................................1
7-10...................................2
11-15..................................3
16-20..................................4
21-25..................................5
26-30..................................6
31-35..................................7
Over 35................................8

5. Total number of individually administered schools in your entire school jurisdiction is 9

Less than 3............................1
3-5....................................2
6-8....................................3
9-11...................................4
12-14..................................5
15-17..................................6
18-21..................................7
Over 21................................8

6. Number of individual departments (social studies, science, guidance and counselling departments, etc.) in your school (if a principal) or central office administration (other than principals) is 10

1-2....................................1
3-4....................................2
5-6....................................3
7-8....................................4
9-10...................................5
11-12..................................6
Over 12................................7

7. Number of authority or hierarchial levels in the school jurisdiction (as per organizational chart) is 11

Less than 6............................1
6......................................2
7......................................3
8......................................4
9......................................5
More than 9............................6

## SECTION TWO - ORGANIZATIONAL COMPLEXITY

**INSTRUCTIONS** : Please study the following definitions of variables that are associated with the complexity of an organization, and then, for each of the given pairs of complexity variables given below, please circle the number of the variable that you rank as most important.

Example-
Vertical Differentiation ------ Horizontal Differentiation
1 [✓ 2]

Vertical Differentiation - the depth or number of authority levels in the hierarchy.

Horizontal Differentiation - the number of departments in a school (if a principal) or number of departments in the central office (all others).

Spatial Dispersion - the number of individually administered schools in the the entire school jurisdiction.

Please circle the most important variable in each set of pairs:

| | Do not write in this space<br>cc |
|---|---|
| Vertical Differentiation ----- Horizontal Differentiation<br>1 2 | 12 |
| Horizontal Differentiation ----- Spatial Dispersion<br>2 3 | 13 |
| Vertical Differentiation ----- Spatial Dispersion<br>1 3 | 14 |

## SECTION THREE- LEAST PREFERRED CO- WORKER RATINGS

**INSTRUCTIONS:** Think of, but do not name the person on your staff with whom you can work least well. Rate that person on the following scales by circling the scale values that best describe your feelings toward that person.

| | | | | | | | | | Do not write in this space<br>cc |
|---|---|---|---|---|---|---|---|---|---|
| COMPETENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HELPLESS | 15 |
| UNDERSTANDING | 1 | 2 | 3 | 4 | 5 | 6 | 7 | CRITICAL | 16 |
| UNPREDICTABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PREDICTABLE | 17 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 18 |
| CASUAL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | BUSINESS - LIKE | 19 |
| COMPLACENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | AMBITIOUS | 20 |
| GUARDED | 1 | 2 | 3 | 4 | 5 | 6 | 7 | OPEN | 21 |
| COMMITTED | 1. | 2 | 3 | 4 | 5 | 6 | 7 | DISINTERESTED | 22 |
| EFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INEFFICIENT | 23 |
| DEVIOUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DIRECT | 24 |
| PERSUASIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNCONVINCING | 25 |
| TRUSTWORTHY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNRELIABLE | 26 |
| CONSISTENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | ERRATIC | 27 |
| ACCEPTING | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REJECTING | 28 |
| APATHETIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | VIGOROUS | 29 |
| CONSIDERATE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TACTLESS | 30 |
| IRRESOLUTE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DECISIVE | 31 |
| SUCCESSFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNSUCCESSFUL | 32 |
| OBSTRUCTIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HELPFUL | 33 |
| IMPETUOUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DELIBERATE | 34 |

## SECTION FOUR-FEELINGS ABOUT VARIOUS KINDS OF INFORMATION

GENERAL : The purpose of this section is for you to express your feelings or impressions about various kinds of information. To complete this section, assume that you, in your present position in your school or school jurisdiction are receiving various types of information from the school jurisdiction's Management Information System for day to day and long-term decision making. Further assume that you receive the information at time intervals agreeable to you. As well, assume that the measurement or determination of the information is acceptable.

SPECIFIC INSTRUCTIONS : You are asked to consider the type of information, which is stated at the top of each of the following pages, and then to indicate your feelings or impressions about that type of information in relation to each of the adjective pairs listed below the specified information.

Indicate your responses by circling the appropriate number as follows:

If you feel that the type of information at the top of the page is very closely related to one or the other end of the adjective pair, then you should circle the appropriate number at one of the extreme ends of the scale as follows:

GOOD [✓ 1] 2 3 4 5 6 7 BAD (OR) GOOD 1 2 3 4 5 6 [✓ 7] BAD

If you feel the type of information is quite closely related to one or the other end of the scale (but not extremely), then you should circle the appropriate number next to one of the extremes as follows:

GOOD 1 [✓ 2] 3 4 5 6 7 BAD (or) GOOD 1 2 3 4 5 [✓ 6] 7 BAD

If you feel the type of information is only slightly related to one side as opposed to the other side (but not really neutral), then you should circle either 3 or 5 as follows

GOOD 1 2 [✓ 3] 4 5 6 7 BAD (or) GOOD 1 2 3 4 [✓ 5] 6 7 BAD

If, on the other hand, you feel the type of information is neutral or it does not suggest any feeling in either direction of the scale, or is both sides are equally associated with the type of information, or if the scale seems completely irrelevant, then you should circle the number 4.

Make each adjective pair a separate and independent judgement of feeling.

Work at a fairly fast rate - 5 seconds per adjective pair is generally sufficient. Do not worry or puzzle over individual items. There is no right or wrong answer. Do not look back and forth through the items. Do not try to to remember how you responded to similar items earlier.

It is your first impressions, the immediate feelings about the items that are desired. On the other hand, please be careful for it is your true impressions that are requirec

PLEASE TURN TO THE NEXT PAGE

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

***********************************

MOTIVATION LEVEL OF YOUR STAFF MEMBERS

| | | | | | | | | | Do not write in this space cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 35 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 36 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 37 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 38 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 39 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 40 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 41 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 42 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 43 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 44 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 45 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 46 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 47 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

INVENTORY OF YOUR STAFFS' INDIVIDUAL SKILLS AND COMPETENCIES

| | | | | | | | | | Do not write in this space cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 48 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 49 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 50 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 51 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 52 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 53 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 54 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 55 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 56 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 57 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 58 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 59 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 60 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

RECRUITMENT AND TRAINING COSTS FOR YOUR STAFF ARE GIVEN IN DETAIL

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | [illegible] |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 62 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 63 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 64 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 65 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 66 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 67 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 68 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 69 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 70 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 71 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 72 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 73 |

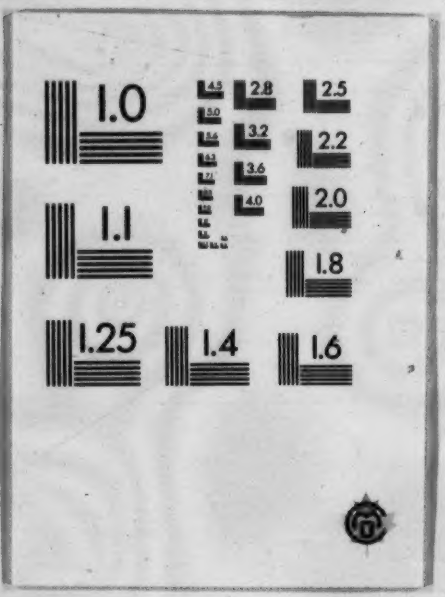
Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

A MEASURE OF LEADERSHIP STYLE FOR ALL ADMINISTRATORS

| | | | | | | | | | Do not write in this space<br>cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 74 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 75 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 76 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 77 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 78 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 79 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 80 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 10 ☐☐☐ Card ☐<br>5 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 6 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 7 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 8 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 9 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 10 |

4 OF / DE 4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1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0

Please **circle** the appropriate number in each adjective pair that **best expresses your feelings** about this type of information:

*******************************

INVENTORY OF YOUR STAFFS' ATTITUDES

| | | | | | | | | | Do not write in this space cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 11 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 12 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 13 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 14 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 15 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 16 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 17 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 18 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 19 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 20 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 21 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 22 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 23 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

TRAINING AND RECRUITMENT COSTS ARE GIVEN IN DETAIL AND COSTS ARE CHARGED OR ALLOCATED EQUALLY TO EACH OF THE BUDGETS FOR THE NEXT FIVE YEARS

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | cc 24 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 25 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 26 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 27 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 28 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 29 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 30 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 31 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 32 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 33 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 34 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 35 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 35 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

***********************************

A MEASURE OF EACH OF YOUR STAFF MEMBERS' PRODUCTIVITY

| | | | | | | | | | Do not write in this space<br>cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 36 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 37 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 38 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 39 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 40 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 41 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 42 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 43 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 44 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 45 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 46 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 47 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 48 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

A MEASURE OF EACH OF YOUR STAFF MEMBERS' SATISFACTION LEVEL

| | | | | | | | | | Do not write in this space cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 49 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 50 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 51 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 52 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 53 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 54 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 55 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 56 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 57 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 58 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 59 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 60 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 61 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * *

TRAINING AND RECRUITMENT COSTS ARE GIVEN IN DETAIL AND CHARGED COMPLETELY TO THIS YEAR'S BUDGET

| | | | | | | | | | Do not write in this space cc. |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 62 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 63 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 64 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 65 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 66 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 67 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 68 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 69 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 70 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 71 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 72 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 73 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 74 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

AMOUNTS AND COSTS OF SUPPLIES SUCH AS PAPER, BLANK CASSETTE TAPES, INK, CLEANING COMPOUND, ETC. THAT YOU HAVE USED TO DATE

| | | | | | | | | | Do not write in this space cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 75 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 76 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 77 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 78 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 79 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 80 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 5 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 6 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 7 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 8 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 9 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 10 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 11 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

AMOUNTS AND COSTS OF CAPITAL EQUIPMENT SUCH AS TYPEWRITERS, CALCULATORS, PARALLEL BARS, ETC. PURCHASED BY YOU TO DATE

| | | | | | | | | | Do not write in this space cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 12 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 13 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 14 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 15 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 16 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 17 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 18 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 19 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 20 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 21 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 22 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 23 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 24 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information:

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

A MEASURE OF EACH OF YOUR STAFF MEMBERS' PERCEPTIONS

| | | | | | | | | | Do not write in this space<br>cc |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 25 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 26 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 27 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 28 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 29 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 30 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 31 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 32 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 33 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 34 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 35 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 36 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 37 |

# APPENDIX J

## PILOT STUDY-PROPER (PHASE THREE) QUESTIONNAIRE

# SURVEY OF FEELINGS TOWARDS VARIOUS KINDS OF INFORMATION

**MAJOR PURPOSE:** The major purpose of this questionnaire is to ascertain the feelings of people toward various kinds of information and other things by having you express or indicate your feelings through a series of descriptive adjective pair scales.

**GENERAL DIRECTIONS:** All responses are to be made within this booklet--there are no separate answer sheets.

Each questionnaire will definitely remain anonymous, thus full confidentiality is ensured--the school code number used by the Department of Education (principals only) and the district type and number are requested only for the purpose of follow-up requests.

This questionnaire is divided into five sections. Please follow the instructions for each section.

## SECTION ONE -- GENERAL INFORMATION

Do not write in this space

☐☐☐ 1
I.D. Card

**INSTRUCTIONS:** Please answer by circling the appropriate number to the right of each question. In items 3 and 4 only, please provide the requested numbers.

1. Your position is:

| | | |
|---|---|---|
| Principal . . . . . . . . . . . . . . . . . . . . . . . . | 1 | 5 |
| Assistant Superintendent . . . . . . . . . . . . . . . . | 2 | |
| Superintendent . . . . . . . . . . . . . . . . . . . . . | 3 | |
| Secretary-Treasurer . . . . . . . . . . . . . . . . . . . | 4 | |

2. Your district type is:

| | | |
|---|---|---|
| County . . . . . . . . . . . . . . . . . . . . . . . . . | 1 | 6 |
| Division . . . . . . . . . . . . . . . . . . . . . . . . | 2 | |
| Protestant District . . . . . . . . . . . . . . . . . . . | 3 | |
| Catholic District . . . . . . . . . . . . . . . . . . . . | 4 | |

Do not write
in this space

3. Your school district number is:

☐☐☐☐ 7-10

4. If you are a principal, your school code number, i.e. the official code number provided by the Alberta Department of Education, is: (All other please place a zero in the blank)

☐☐☐☐ 11-14

5. Your sex is:

| | | |
|---|---|---|
| Male . . . . . . . . . . . . . . . . . . . . . . . . . | 1 | 15 |
| Female . . . . . . . . . . . . . . . . . . . . . . . . | 2 | |

6. Your age is:

| | | |
|---|---|---|
| 20 or less . . . . . . . . . . . . . . . . . . . . . . | 1 | 16 |
| 21 - 25 . . . . . . . . . . . . . . . . . . . . . . . | 2 | |
| 26 - 30 . . . . . . . . . . . . . . . . . . . . . . . | 3 | |
| 31 - 45 . . . . . . . . . . . . . . . . . . . . . . . | 4 | |
| 46 - 65 . . . . . . . . . . . . . . . . . . . . . . . | 5 | |
| 66 or more . . . . . . . . . . . . . . . . . . . . . | 6 | |

7. Your highest level of training (completed degree) is:

| | | |
|---|---|---|
| Bachelor . . . . . . . . . . . . . . . . . . . . . . . | 1 | 17 |
| Masters . . . . . . . . . . . . . . . . . . . . . . . . | 2 | |
| Doctorate . . . . . . . . . . . . . . . . . . . . . . | 3 | |

8. Your present years of experience in education is:

| | | |
|---|---|---|
| 6 or less . . . . . . . . . . . . . . . . . . . . . . | 1 | 18 |
| 7 - 10 . . . . . . . . . . . . . . . . . . . . . . . . | 2 | |
| 11 - 15 . . . . . . . . . . . . . . . . . . . . . . . | 3 | |
| 16 - 20 . . . . . . . . . . . . . . . . . . . . . . . | 4 | |
| 21 - 25 . . . . . . . . . . . . . . . . . . . . . . . | 5 | |
| 26 - 30 . . . . . . . . . . . . . . . . . . . . . . . | 6 | |
| 31 - 35 . . . . . . . . . . . . . . . . . . . . . . . | 7 | |
| 36 or more . . . . . . . . . . . . . . . . . . . . . | 8 | |

Do not write in this space

## PRINCIPALS ONLY

**NOTE:** Only principals should complete items 9a, 10a, and 11a, while all others should complete items 9b, 10b and 11b.

9a. The number of position levels (authority hierarchy) that you administer in your own school, including your own position, as well as the position levels in your school system's central office that interrelate with or are associated in any way with your school, as per organizational chart, are: (use calculation box provided below to determine the number of levels)

Calculation Box for Determining Number of Position Levels

Check the position levels (authority hierarchy) (a) that you administer in your own school, including your own position, and (b) those position levels in your own school system's central office that interrelate with or are associated in any way with your school (as per organizational chart):

(a) School

Teacher Aides . . . ____
Teachers . . . . . ____
Department or Subject Area Heads. . . . ____
Vice Principals. . ____
Principal . . . . . ____
Others (specify)
____
____
____

Total checks (a) ☐

(b) Central Office

Supervisors . . . . ____
Directors . . . . . ____
Assistant Superintendents . . . . . ____
Superintendent/Sec-Treasurer. . . . ____
Chief Executive Officer . . . . . . . . ____
School Board or Committee . . . . . . ____
Others (specify). . . ____

Total Checks (b) ☐

Total of (a) and (b) ☐

Circle the appropriate number below

| | | |
|---|---|---|
| 4 or less | 1 | 19 |
| 5 | 2 | |
| 6 | 3 | |
| 7 | 4 | |
| 8 | 5 | |
| 9 | 6 | |
| 10 | 7 | |
| 11 | 8 | |
| 12 or more | 9 | |

Do not write
in this space

## PRINCIPALS ONLY

10a. The number of individual or separate divisions or departments that function as distinct units in your own school and those central office units that interrelate with your own school in any way are: (use calculation box provided below)

Calculation Box for Determining Number of Units

**A. Own School**

Number of distinct and separate curricular or instructional units (divisions or departments) such as Math, English, Commercial, Art, Social Studies, etc. are. . . . . . . . . . . . . . ______*

Number of distinct and separate support or special area units (departments or divisions) such as administration, secretarial, guidance and counselling, food services, maintenance, bussing, business management, etc. are . . . ______

TOTAL OF A ☐

*For example, if your own school had a distinct Math department or division, as well as Social Studies, English, Fine Arts and Physical Education, you would place a __5__ in the provided blank.

**B. Central Office**

Number of distinct and separate or curricular units (divisions or departments) such as Math, English, Special Education, Music, etc. that interrelate with your school are: . . . . . ______

Number of distinct and separate or special area units (departments or divisions) such as administration, finance and business, media, maintenance, operation, bussing, etc. that interrelate with your school are: . . . . . ______

TOTAL OF B ☐

Total of A and B ☐ (Circle appropriate number below)

| | | |
|---|---|---|
| 1 - 2 | 1 | 20 |
| 3 - 4 | 2 | |
| 5 - 6 | 3 | |
| 7 - 8 | 4 | |
| 9 - 10 | 5 | |
| 11 - 12 | 6 | |
| 13 - 14 | 7 | |
| 15 - 16 | 8 | |
| 17 or more | 9 | |

Do not write
in this space

## PRINCIPALS ONLY

11a. The total number of individually administered schools in your own school system, including your own, and the central office and other separate sites (say, for example, the warehouse if it is located on a separate site from the central office) that you interrelate with or are associated with your school in any way in the performance of your duties as principal are:

| | | |
|---|---|---|
| 3 or less | 1 | 21 |
| 4 - 6 | 2 | |
| 7 - 9 | 3 | |
| 10 - 12 | 4 | |
| 13 - 15 | 5 | |
| 16 - 18 | 6 | |
| 19 - 21 | 7 | |
| 22 - 24 | 8 | |
| 25 or more | 9 | |

Do not write
in this space

**NOTE:** All respondents except principals should complete questions 9b, 10b and 11b while principals should complete questions 9a, 10a and 11a.

9b. The number of position levels (authority hierarchy) that exist in the central office, as per organizational chart, as well as the position levels of the school in your school system with the largest number of position levels are: (use calculation box below to determine the number of levels)

Calculation Box for Determining Number of Position Levels

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Check the position levels (authority hierarchy) that (a) exist in your central office, as per organizational chart, and (b) the position levels of the school in your system that has the largest number of such levels:

(a) Central Office

Supervisors . . . _____
Directors. . . . _____
Asst. Supts. . . . _____
Superintendent/
Sec. Treasurer. . _____
Chief Executive
Officer . . . . . . _____
School Board or
Committee . . . . . _____
Other (Specify) _____
_____

Total Checks (a) ☐

(b) School with Largest Number of Levels

Teacher Aides . . . . _____
Teachers . . . . . . . . _____
Department or Subject
Area Heads. . . . . . . _____
Vice Principals. . . . _____
Principals . . . . . . _____
Others (specify)
_____
_____
_____

Total checks (b) ☐

Total of (a) and (b) ☐ (Circle the appropriate number below)

| | | |
|---|---|---|
| 4 or less | . . . . . . . . . . . . . . . . . . . . | 1 |
| 5 | . . . . . . . . . . . . . . . . . . . . . . | 2 |
| 6 | . . . . . . . . . . . . . . . . . . . . . . | 3 |
| 7 | . . . . . . . . . . . . . . . . . . . . . . | 4 |
| 8 | . . . . . . . . . . . . . . . . . . . . . . | 5 |
| 9 | . . . . . . . . . . . . . . . . . . . . . . | 6 |
| 10 | . . . . . . . . . . . . . . . . . . . . . | 7 |
| 11 | . . . . . . . . . . . . . . . . . . . . . | 8 |
| 12 or more | . . . . . . . . . . . . . . . . . . . | 9 |

19

Do not write
in this space

10b. The number of individual or separate departments or divisions that function as distinct units in your school system's central office and school with the largest number of such units are: (use calculation box provided below to determine number)

Calculation Box for Determining Number of Units

A. Central Office

Number of distinct or separate units (divisions or departments) such as Math, English, Special Education, Music, etc. if any, are . . . . . . . . . ____

Number of distinct or separate support or special area units (divisions or departments) such as administration, finance and business, media, maintenance, bussing, operations, etc. are . . . . . . ____

TOTAL OF A ☐

B. School With Largest Number of Units

Number of distinct or separate curricular or instructional units (divisions or departments) such as Math, English, Commercial Art, Social Studies, etc. are . . . . . . . . . . . . . . . . ____

Number of distinct or separate support or special area units (departments or divisions) such as administration, secretarial, guidance and counselling, food services, maintenance, bussing, business management, etc. are . . . . . . . . . . ____

TOTAL OF B ☐

TOTAL OF A AND B ☐ (Circle appropriate number below)

| | | |
|---|---|---|
| 2 or less . . . . . . . . . . . . . . . . . . . . . | 1 | 20 |
| 3 - 4 . . . . . . . . . . . . . . . . . . . . . . . | 2 | |
| 5 - 6 . . . . . . . . . . . . . . . . . . . . . . . | 3 | |
| 7 - 8 . . . . . . . . . . . . . . . . . . . . . . . | 4 | |
| 9 - 10 . . . . . . . . . . . . . . . . . . . . . . | 5 | |
| 11 - 12 . . . . . . . . . . . . . . . . . . . . . | 6 | |
| 13 - 14 . . . . . . . . . . . . . . . . . . . . . | 7 | |
| 15 - 16 . . . . . . . . . . . . . . . . . . . . . | 8 | |
| 17 or more . . . . . . . . . . . . . . . . . . . | 9 | |

Do not write
in this space

11b. The total number of individually administered schools in your own school system and the central office and other separately administered sites (say, for example, the warehouse if it is located on a separate site from the central office) are:

| | | |
|---|---|---|
| 3 or less | 1 | 21 |
| 4 - 6 | 2 | |
| 7 - 9 | 3 | |
| 10 - 12 | 4 | |
| 13 - 15 | 5 | |
| 16 - 18 | 6 | |
| 19 - 21 | 7 | |
| 22 - 24 | 8 | |
| 25 or more | 9 | |

## SECTION TWO -- HUMAN RESOURCE INFORMATION

SOME EDUCATORS ARGUE THAT PRESENT REPORTS GIVEN TO SCHOOL ADMINISTRATORS EMPHASIZE ONLY THE PHYSICAL AND FINANCIAL ASPECTS OF THE SCHOOL OPERATION AND, IN TURN, NEGLECT HUMAN RESOURCE INFORMATION LIKE MANAGERIAL, PEER AND SUBORDINATE ATTITUDES, MOTIVATION, PERCEPTIONS, LOYALTY, SATISFACTION, PRODUCTIVITY, SKILLS AND COMPETENCE, LEADERSHIP STYLE, BEHAVIOR PATTERNS, AS WELL AS THINGS LIKE RECRUITMENT, FAMILIARIZATION AND TRAINING COSTS.

HOW DO YOU FEEL ABOUT HUMAN RESOURCE INFORMATION?

On the 7 point scale, please indicate your feeling to the following statement by placing an X in the appropriate blank.

HUMAN RESOURCE TYPE OF INFORMATION (AS ILLUSTRATED ABOVE) SHOULD DEFINITELY BE INCLUDED IN SCHOOL SYSTEM REPORTS

STRONGLY IN FAVOR :____:____:____:____:____:____:____: STRONGLY OPPOSED  22

## SECTION THREE -- ORGANIZATIONAL COMPLEXITY

PART A:

Please study the following definitions of variables that are associated with the complexity of any organization. Then, for each of the given pairs of variables, please circle the number of the variable that you feel is more important of the two in determining how complex your own school (principals) or school system is:

EXAMPLE: If you feel that horizontal differentiation is more important in determining complexity then you would circle the number as illustrated below:

| | |
|---|---|
| Vertical Differentiation . . . . . . . . | Horizontal Differentiation |
| 1 | [✓ 2] |

Vertical Differentiation: the depth of the hierarchy or the number of position levels in the authority structure of the central office and schools (principals should refer to item 9a and all others to item 9b in Section One for more explication).

Horizontal Differentiation: the number of individual or separate departments or divisions that function as distinct units in the central office and schools (principals should refer to item 10a and all others to item 10b in Section One for more explication).

Spatial Dispersion: the number of individually administered schools and other sites that interrelate with your school in the case of principals. In the case of all others, the total number of individually administered schools and other sites including the central office (principals should refer to item 11a and all others to item 11b in Section One for more explication).

For each of the following pairs of complexity determinants, please circle the one you feel is more important in determining the complexity of your school (if a principal) or school system:

| | | Do not write in this space |
|---|---|---|
| Vertical Differentiation . . . . . . | Horizontal Differentiation | 23 |
| 1 | 2 | |
| Horizontal Differentiation . . . . . | Spatial Dispersion | 24 |
| 2 | 3 | |
| Vertical Differentiation . . . . . . | Spatial Dispersion | 25 |
| 1 | 3 | |

PART B:

As indicated above, the complexity of your school or school system can be determined by considering, in combined fashion, the three factors of vertical differentiation, horizontal differentiation and spatial dispersion. Please indicate how complex you feel your own school (principals) or school system (all others) is by circling the appropriate number on the following scale:

| SCARCELY COMPLEX | SOMEWHAT | QUITE | VERY | EXTREMELY COMPLEX | |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 26 |

Please do not write in this space

## SECTION FOUR -- LEAST PREFERRED CO-WORKER RATINGS

**INSTRUCTIONS:** Think of, but do not name, the person on your staff with whom you can work least well. Rate that person on the following scales by circling the scale values that best describe your feelings toward that person.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| COMPETENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HELPLESS | 27 |
| UNDERSTANDING | 1 | 2 | 3 | 4 | 5 | 6 | 7 | CRITICAL | 28 |
| UNPREDICTABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PREDICTABLE | 29 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 30 |
| CASUAL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | BUSINESS-LIKE | 31 |
| COMPLACENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | AMBITIOUS | 32 |
| GUARDED | 1 | 2 | 3 | 4 | 5 | 6 | 7 | OPEN | 33 |
| COMMITTED | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DISINTERESTED | 34 |
| EFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INEFFICIENT | 35 |
| DEVIOUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DIRECT | 36 |
| PERSUASIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNCONVINCING | 37 |
| TRUSTWORTHY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNRELIABLE | 38 |
| CONSISTENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | ERRATIC | 39 |
| ACCEPTING | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REJECTING | 40 |
| APATHETIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | VIGOROUS | 41 |
| CONSIDERATE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TACTLESS | 42 |
| IRRESOLUTE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DECISIVE | 43 |
| SUCCESSFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNSUCCESSFUL | 44 |
| OBSTRUCTIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HELPFUL | 45 |
| IMPETUOUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DELIBERATE | 46 |

## SECTION FIVE -- FEELINGS ABOUT VARIOUS KINDS OF INFORMATION

GENERAL: The purpose of this section is for you to express your feelings or impressions about various kinds of information. To complete this section, assume that you, in your present position in your school or school jurisdiction, are receiving various types of information from the school jurisdiction's Management Information System for day-to-day and long-term decision-making. Further assume that you receive the information at time intervals agreeable to you, and that the measurement or determination of the information is acceptable to you. As well, assume that the measurements are only in relation to the organization.

SPECIFIC INSTRUCTIONS: You are asked to consider the type of information which is stated at the top of each of the following pages, and then to indicate your feelings or impressions about that type of information in terms of each of the adjective pairs listed. Indicate your response to each adjective pair by circling the appropriate number as follows:

If you feel that the type of information at the top of the page is very closely related to one or the other end of the adjective pair, then you should circle the appropriate number at one of the extreme ends of the scale as follows:

GOOD ① 2 3 4 5 6 7 BAD (OR) GOOD 1 2 3 4 5 6 ⑦ BAD

If you feel the type of information is quite closely related to one or the other end of the scale (but not extremely) then you should circle the appropriate number next to one of the extremes as follows:

GOOD 1 ② 3 4 5 6 7 BAD (OR) GOOD 1 2 3 4 5 ⑥ 7 BAD

If you feel the type of information is only slightly related to one side as opposed to the other side (but not really neutral), then you should circle either 3 or 5 as follows:

GOOD 1 2 ③ 4 5 6 7 BAD (OR) GOOD 1 2 3 4 ⑤ 6 7 BAD

If, on the other hand, you feel the type of information is neutral, or does not suggest any feeling in either direction of the scale, or if both sides are equally associated with the type of information, or if the scale seems completely irrelevant, then you should circle the number 4.

Make each adjective pair a separate and independent judgment of feeling. Respond to each adjective pair.

Work at a fairly fast rate--5 seconds per adjective pair is generally sufficient. Do not worry or puzzle over individual items. There is no right of wrong answer. Do not look back and forth through the items. Do not try to remember how you responded to similar items earlier.

It is your first impressions, the immediate feelings, about the items that are crucial. On the other hand, please be careful for it is your true impressions that are important.

Do not write in this space

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

* * * * * * * * * *

A MEASURE OF EACH OF YOUR STAFF MEMBERS MOTIVATION LEVEL

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 47 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 48 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 49 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 50 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 51 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 52 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 53 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 54 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 55 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 56 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 57 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 58 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 59 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 60 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 61 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 62 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 63 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 64 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 65 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 66 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 67 |

Do not write
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Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

* * * * * * * * *

INVENTORY OF YOUR INDIVIDUAL STAFF MEMBERS SKILLS AND COMPETENCIES.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 68 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 69 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 70 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 71 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 72 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 73 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 74 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 75 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 76 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 77 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 78 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 79 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 80 |

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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 5 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 6 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 7 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 8 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 9 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 10 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 11 |
| OPTIMISITC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 12 |

Do not write
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Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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RECRUITMENT AND TRAINING COSTS FOR YOUR STAFF ARE GIVEN IN DETAIL

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 13 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 14 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 15 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 16 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 17 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 18 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 19 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 20 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 21 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 22 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 23 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 24 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 25 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 26 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 27 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 28 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 29 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 30 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 31 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 32 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 33 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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A MEASURE OF LEADERSHIP STYLE FOR EACH ADMINISTRATOR

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 34 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 35 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 36 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 37 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 38 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 39 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 40 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 41 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 42 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 43 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 44 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 45 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 46 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 47 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 48 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 49 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 50 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 51 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 52 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 53 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 54 |

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Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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INVENTORY OF YOUR INDIVIDUAL STAFF MEMBERS ATTITUDES

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 55 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 56 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 57 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 58 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 59 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 60 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 61 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 62 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 63 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 64 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 65 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 66 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 67 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 68 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 69 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 70 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 71 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 72 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 73 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 74 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 75 |

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Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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TRAINING AND RECRUITMENT COSTS ARE GIVEN IN DETAIL AND COSTS ARE CHARGED OR ALLOCATED EQUALLY TO EACH OF THE BUDGETS FOR THE NEXT FIVE YEARS.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 76 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 77 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 78 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 79 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 80 |

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I.D. Card

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 5 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 6 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 7 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 8 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 9 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 10 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 11 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 12 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 13 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 14 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 15 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 16 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 17 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 18 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 19 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 20 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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A MEASURE OF EACH OF YOUR STAFF MEMBERS PRODUCTIVITY

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 21 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 22 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 23 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 24 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 25 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 26 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 27 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 28 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 29 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 30 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 31 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 32 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 33 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 34 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 35 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 36 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 37 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 38 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 39 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 40 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 41 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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A MEASURE OF EACH OF YOUR STAFF MEMBERS SATISFACTION LEVEL

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 42 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 43 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 44 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 45 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 46 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 47 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 48 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 49 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 50 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 51 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 52 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 53 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 54 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 55 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 56 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 57 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 58 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 59 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 60 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 61 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 62 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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TRAINING AND RECRUITMENT COSTS ARE GIVEN IN DETAIL AND CHARGED TOTALLY TO THIS YEAR'S BUDGET.

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 63 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 64 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 65 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 66 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 67 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 68 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 69 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 70 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 71 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 72 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 73 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 74 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 75 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 76 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 77 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 78 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 79 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 80 |
| | | | | | | | | | ☐ ☐ ☐ 4<br>I.D. Card |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 5 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 6 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 7 |

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Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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AMOUNTS AND COSTS OF SUPPLIES SUCH AS PAPER, BLANK CASSETTE TAPES, INK, CLEANING COMPOUND, ETC. PURCHASED TO DATE.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 8 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 9 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 10 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 11 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 12 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 13 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 14 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 15 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 16 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 17 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 18 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 19 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 20 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 21 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 22 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 23 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 24 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 25 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 26 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 27 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 28 |

Do not write in this space

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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AMOUNTS AND COSTS OF CAPITAL EQUIPMENT SUCH AS TYPEWRITERS, CALCULATORS, PARALLEL BARS, ETC. PURCHASED TO DATE.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 29 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 30 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 31 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 32 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 33 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 34 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 35 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 36 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 37 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 38 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 39 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 40 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 41 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 42 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 43 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 44 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 45 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 46 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 47 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 48 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 49 |

Do not write
in this space

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

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A MEASURE OF EACH OF YOUR STAFF MEMBERS ORGANIZATIONAL PERCEPTIONS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 50 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 51 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 52 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 53 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 54 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 55 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 56 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 57 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 58 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 59 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 60 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 61 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 62 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 63 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 64 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 65 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 66 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 67 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 68 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 69 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 70 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

* * * * * * *

A MEASURE OF EACH OF YOUR STAFF MEMBERS ORGANIZATIONAL LOYALTY

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 71 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 72 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 73 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 74 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 75 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 76 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 77 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 78 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 79 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 80 |
| | | | | | | | | | ☐ ☐ ☐ 5<br>I.D. Card |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 5 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 6 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 7 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 8 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 9 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 10 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 11 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 12 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 13 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 14 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 15 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

* * * * * * * * *

A MEASURE OF MANAGERIAL, PEER, AND SUBORDINATE ORGANIZATIONAL BEHAVIOR.

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| BAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | GOOD | 16 |
| VALUABLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WORTHLESS | 17 |
| AWFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NICE | 18 |
| MEANINGFUL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | MEANINGLESS | 19 |
| SICK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | HEALTHY | 20 |
| IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNIMPORTANT | 21 |
| INEFFICIENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EFFICIENT | 22 |
| POSITIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NEGATIVE | 23 |
| TIMELY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | UNTIMELY | 24 |
| IRRELEVANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | RELEVANT | 25 |
| WISE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | FOOLISH | 26 |
| STRONG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | WEAK | 27 |
| SHALLOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | DEEP | 28 |
| HEAVY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | LIGHT | 29 |
| HUMOROUS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SERIOUS | 30 |
| HARD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | SOFT | 31 |
| INHERENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | EXTRANEOUS | 32 |
| UNREALISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REALISTIC | 33 |
| TANGIBLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | INTANGIBLE | 34 |
| PROGRESSIVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | REGRESSIVE | 35 |
| OPTIMISTIC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | PESSIMISTIC | 36 |

# APPENDIX K

## STUDY QUESTIONNAIRE: SURVEY OF FEELINGS TOWARD VARIOUS KINDS OF INFORMATION

## STUDY QUESTIONNAIRE NOTATIONS

Several questionnaire notations need to be made since the original 1031 study subjects did not all receive an identical questionnaire:

1. Questionnaires distributed to the 816 principals were in yellow stock.
2. Questionnaires distributed to the 85 superintendents and 130 secretary-treasurers were in green stock.
3. Since the organizational complexity configuration count and definition of the complexity elements differed somewhat for the principals from that of the superintendents and secretary-treasurers, pages two and three of the questionnaire differed: the first set in Appendix K relates to principals while the second set of pages two and three relates to the superintendents and secretary-treasurers.
4. Distributed questionnaires were printed on both sides thereby reducing the number of separate pages to five.

## SURVEY OF FEELINGS TOWARDS VARIOUS KINDS OF INFORMATION

**MAJOR PURPOSE:** The major purpose of this questionnaire is to ascertain the feelings of people toward various kinds of information and other things by having you express or indicate your feelings through a series of descriptive adjective pair scales.

**GENERAL DIRECTIONS:** All responses are to be made within this booklet--there are no separate answer sheets.

Each questionnaire will definitely remain anonymous; the school code number used by the Department of Education (principals only) and the district type and number are requested only for the purpose of follow-up requests.

This questionnaire is divided into four sections. Please follow the instructions for each section.

## SECTION ONE — GENERAL INFORMATION

Do not write in this space

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I.D. Card

**INSTRUCTIONS:** Please answer by circling the appropriate number to the right of each question. In items 3 and 4 only, please provide the requested numbers.

1. Your position is: 5

Principal .............................................. 1
Superintendent .............................................. 2
Secretary-Treasurer .............................................. 3

2. Your district type is: 6

County .............................................. 1
Division .............................................. 2
Public District .............................................. 3
Separate District .............................................. 4

3. Your school district number is: 7-10

☐☐☐☐

4. If you are a principal, your school code number, i.e. the official code number provided by the Alberta Department of Education, is: (All others, please place a zero in the blank) 11-14

☐☐☐☐

5. Your sex is: 15

Male .............................................. 1
Female .............................................. 2

6. Your age is: 16

20 or less .............. 1 31 - 45 ........... 4
21 - 25 .................. 2 46 - 65 ........... 5
26 - 30 .................. 3 66 or more ........ 6

7. Your highest level of training (completed degree) is: 17

Bachelor .............................................. 1
Masters .............................................. 2
Doctorate .............................................. 3

8. Your present years of experience in education is: 18

6 or less ................ 1 21 - 25 .......... 5
7 - 10 ................... 2 26 - 30 .......... 6
11 - 15 .................. 3 31 - 35 .......... 7
16 - 20 .................. 4 36 or more ........ 8

Do not write
in this space

9. The number of position levels (authority hierarchy) that you administer in your own school, including your own position, as well as the position levels in your school system's central office that interrelate with or are associated in any way with your school, as per organizational chart, are (use calculation box provided below to determine the number of levels):

Calculation Box for Determining Number of Position Levels

Check the position levels (authority hierarchy) (a) that you administer in your own school, including your own position, and (b) those position levels in your own school system's central office that interrelate with or are associated in any way with your school (as per organizational chart):

| | | | |
|---|---|---|---|
| A) School | | B) Central Office | |
| Teacher Aides ............... | ____ | Supervisors .......................... | ____ |
| Teachers ..................... | ____ | Directors ............................ | ____ |
| Department or Subject Area Heads ..................... | ____ | Assistant Superintendents ............ | ____ |
| Vice Principals ............ | ____ | Superintendents/Sec.-Treasurer ....... | ____ |
| Principal .................. | ____ | Chief Executive Officer .............. | ____ |
| Others (specify) ........... | ____ | School Board or Committee ............ | ____ |
| | ____ | Others (specify) ..................... | ____ |
| TOTAL NUMBER OF CHECKS IN (A) | ☐ | TOTAL NUMBER OF CHECKS IN (B) | ☐ |

19, 20

10. The total number of individually administered schools in your own school system, including your own, and the central office and other separate sites (say, for example, the warehouse if it is located on a separate site from the central office) that you interrelate with or are associated with your school in any way in the performance of your duties as principal are (place number in box): ☐

21

11. The number of individual or separate divisions or departments that function as distinct units in your own school and those central office units that interrelate with your own school in any way are (use calculation box provided below):

Calculation Box for Determining number of Units

A) Own School

Number of distinct and separate curricular or instructional units (divisions or departments) such as Math, English, Commercial, Art, Social Studies, etc. are .................. * ____

Number of distinct and separate support or special area units (departments or divisions) such as administration, secretarial, guidance and counselling, food services, maintenance, bussing, business management, etc. are ............................... ____

TOTAL OF A ☐

22

*For example, if your own school has a separate or distinct Math department or division, as well as departments in Social Studies, English, Fine Arts and Physical Education, you would place a 5 in the provided blank.

B) Central Office

Number of distinct and separate or curricular units (divisions or departments) such as Math, English, Special Education, Music, etc. that interrelate with your school are: ____

Number of distinct and separate or special area units (departments or divisions) such as administration, finance and business, media, maintenance, operation, bussing, etc. that interrelate with your school are: ............................................. ____

TOTAL OF B ☐

23

Do not write
in this space

## SECTION TWO — ORGANIZATIONAL COMPLEXITY

**PART A:**

Please study the following definitions of variables or factors that are associated with the complexity of any organization. Then, for each of the given pairs of variables, please circle the number of the variable that you feel is more important of the two in determining how complex your own school is:

EXAMPLE: If you feel that horizontal differentiation is more important than vertical differentiation in determining complexity then you would circle the number as illustrated below:

Vertical Differentiation ................. Horizontal Differentiation
1 ②

**Vertical Differentiation:**

the depth of the hierarchy or the number of position levels in the authority structure of your school and those in central office that interrelate with your school (refer to Section One, Item 9 for more explication).

**Spatial Dispersion:**

the number of individually administered schools and other sites that interrelate with your school (refer to Section One, Item 10 for more explication).

**Horizontal Differentiation:**

the number of individual or separate departments or divisions that function as distinct units in your school and those in the central office that interrelate with your school (refer to Section One, Item 11 for more explication).

* * * * * * * * *

For each of the following pairs of complexity determinants, please circle the one you feel is more important in determing the complexity of your school.

Vertical Differentiation ................. Spatial Dispersion
1 2 24

Spatial Dispersion ................. Horizontal Differentiation
2 3 25

Vertical Differentiation ................. Horizontal Differentiation
1 3 26

**PART B:**

As indicated above, the complexity of your school can be determined by considering, in combined fashion, the three factors of vertical differentiation, horizontal differentiation and spatial dispersion. Please indicate how complex you feel your school is by circling the appropriate number on the following scale:

| SCARCELY COMPLEX | SOMEWHAT | QUITE | VERY | EXTREMELY COMPLEX |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

27

Do not write
in this space

9. The number of position levels (authority hierarchy) that exist in the central office, as per organizational chart, as well as the position levels of the school in your school system with the largest number of position levels are: (use calculation box below to determine the number of levels)

**Calculation Box for Determining Number of Position Levels**

Check (✓) the position levels (authority hierarchy) that (a) exist in the school in your system that has the largest number of such authority levels and (b) the position levels that exist in your central office, as per organizational chart:

| | | | |
|---|---|---|---|
| A) School with Largest Number of Levels | | B) Central Office | |
| Teacher Aides .................. | ____ | Supervisors ......................... | ____ |
| Teachers ......................... | ____ | Directors ........................... | ____ |
| Department or Subject Area Heads. | ____ | Assistant Superintendents ........... | ____ |
| Vice Principals ................ | ____ | Superintendent/Sec. Treasurer ....... | ____ |
| Principals ....................... | ____ | Chief Executive Officer ............. | ____ |
| Others (specify) ................ | ____ | School Board or Committee ........... | ____ |
| | | Other (specify) ..................... | ____ |
| TOTAL NUMBER OF CHECKS IN (A) | ☐ | TOTAL NUMBER OF CHECKS IN (B) | ☐ |

19, 20

10. The total number of individually administered schools in your own school system and the central office and other separately administered sites (say, for example, the warehouse if it is located on a separate site from the central office) are (place number in box): ☐ 21

11. The number of individual or separate departments or divisions that function as distinct units in your school system's central office and school with the largest number of such units are (use calculation box provided below to determine number):

**Calculation Box for Determining Number of Units**

A) Central Office

Number of distinct or separate instructional or curricular units (divisions or departments) such as Math, English, Special Education, Music, etc. if any, are .................... ____ *

Number of distinct or separate support or special area units (divisions or departments) such as administration, finance and business, media, maintenance, bussing, operations, etc. are ........................................................ ____

TOTAL OF A ☐ 22

*For example, if central office has a separate or distinct Math department or division, as well as departments in Social Studies, English, Fine Arts and Physical Education, you would place a 5 in the provided blank.

B) School With Largest Number of Units

Number of distinct or separate curricular or instructional units (divisions or departments) such as Math, English, Commercial Art, Social Studies, etc. are .......... ____

Number of distinct or separate support or special area units (departments or divisions) such as administration, secretarial, guidance and counselling, food services, maintenance, bussing, business management, etc. are .................................. ____

TOTAL OF B ☐ 23

Do not write
in this space

## SECTION TWO — ORGANIZATIONAL COMPLEXITY

**PART A:**

Please study the following definitions of variables or factors that are associated with the complexity of any organization. Then, for each of the given pairs of variables, please circle the number of the variable that you feel is more important of the two in determining how complex your school system is:

EXAMPLE: If you feel that horizontal differentiation is more important than vertical differentiation in determining complexity then you would circle the number as illustrated below:

Vertical Differentiation .................... Horizontal Differentiation
1 ②

**Vertical Differentiation:**

the depth of the hierarchy or the number of position levels in the authority structure of the central office and the depth of the school with the deepest (greatest number of position levels) hierarchy (refer to Section One, Item 9 for more explication).

**Spatial Dispersion:**

the total number of individually administered schools and other sites including the central office (refer to Section One, Item 10 for more explication).

**Horizontal Differentiation:**

the number of individual or separate divisions or departments that function as distinct units in the central office and the school with the largest number of separate divisions or departments (refer to Section One, Item 11, for more explication).

* * * * * * * * * *

For each of the following pairs of complexity determinants, please circle the one you feel is more important in determining the complexity of your school (if a principal) or school system:

Vertical Differentiation .................. Spatial Dispersion
1 2 24

Spatial Dispersion .................. Horizontal Differentiation 25
2 3

Vertical Differentiation .................. Horizontal Differentiation 26
1 3

**PART B:**

As indicated above, the complexity of your school system can be determined by considering, in combined fashion, the three factors of vertical differentiation, horizontal differentiation and spatial dispersion. Please indicate how complex you feel your school system is by circling the appropriate number on the following scale.

| SCARCELY COMPLEX | SOMEWHAT | QUITE | VERY | EXTREMELY COMPLEX |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

27

Do not write
in this space

## SECTION THREE — LEAST PREFERRED CO-WORKER RATINGS

**INSTRUCTIONS:**

Think of, but do not name, the person on your staff with whom you can work least well. Rate that person on the following scales by circling the scale values that best describe your feelings toward that person.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Pleasant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Unpleasant | 28 |
| Friendly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Unfriendly | 29 |
| Rejecting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Accepting | 30 |
| Helpful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Frustrating | 31 |
| Unenthusiastic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Enthusiastic | 32 |
| Tense | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Relaxed | 33 |
| Distant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Close | 34 |
| Cold | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Warm | 35 |
| Cooperative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Uncooperative | 36 |
| Supportive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Hostile | 37 |
| Boring | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Interesting | 38 |
| Quarrelsome | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Harmonious | 39 |
| Self-Assured | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Hesitant | 40 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Inefficient | 41 |
| Gloomy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Cheerful | 42 |
| Open | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Guarded | 43 |

## SECTION FOUR — FEELINGS ABOUT VARIOUS KINDS OF INFORMATION

**GENERAL:**

The purpose of this section is for you to express your feelings or impressions about various kinds of information. To complete this section, assume that you, in your present position in your school or school jurisdiction, are receiving various types of information from the school jurisdiction's Management Information System for day-to-day and long-term decision-making. Further assume that you receive the information at time intervals agreeable to you, and that the measurement or determination of the information is acceptable to you. As well, assume that the measurements are only in relation to that part of the organization that you manage.

**SPECIFIC INSTRUCTIONS:**

You are asked to consider the type of information which is stated at the top and centre of each of the following pages; and then to indicate your feelings or impressions about that type of information in terms of each of the adjective pairs listed. Indicate your response to each adjective pair by circling the appropriate number as follows:

If you feel that the type of information at the top and centre of the page is very closely related to one or the other end of the adjective pair, then you should circle the appropriate number at one of the extreme ends of the scale as follows:

GOOD ① 2 3 4 5 6 7 BAD (OR) GOOD 1 2 3 4 5 6 ⑦ BAD

If you feel the type of information is quite closely related to one or the other end of the scale (but not extremely) then you should circle the appropriate number next to one of the extremes as follows:

GOOD 1 ② 3 4 5 6 7 BAD (OR) GOOD 1 2 3 4 5 ⑥ 7 BAD

If you feel the type of information is only slightly related to one side as opposed to the other side (but not really neutral), then you should circle either 3 or 5 as follows:

GOOD 1 2 ③ 4 5 6 7 BAD (OR) GOOD 1 2 3 4 ⑤ 6 7 BAD

If, on the other hand, you feel the type of information is neutral, or does not suggest any feeling in either direction of the scale, or if both sides are equally associated with the type of information, or if the scale seems completely irrelevant, then you should circle the number 4.

* * * * * * * * * * * *

Make each adjective pair a separate and independent judgment of feeling. Respond to each adjective pair.

Work at a fairly fast rate--5 seconds per adjective pair is generally sufficient. Do not worry or puzzle over individual items. There is no right or wrong answer. Do not look back and forth through the items. Do not try to remember how you responded to similar items earlier.

It is your first impressions, the immediate feelings, about the items that are crucial. On the other hand, please be careful for it is your true impressions that are important.

Do not write
in this space

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

A MEASURE OF THE SATISFACTION LEVEL OF EACH OF YOUR STAFF MEMBERS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 44 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 45 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 46 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 47 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 48 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 49 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 50 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 51 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 52 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 53 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 54 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 55 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 56 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 57 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

A MEASURE OF THE MOTIVATION LEVEL OF EACH OF YOUR STAFF MEMBERS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 58 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 59 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 60 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 61 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 62 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 63 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 64 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 65 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 66 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 67 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 68 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 69 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 70 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 71 |

Do not write
in this space

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

A MEASURE OF THE ORGANIZATIONAL BEHAVIOR OF EACH ADMINISTRATOR OR MANAGER

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 72 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 73 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 74 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 75 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 76 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 77 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 78 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 79 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 80 |

| | | | |
|---|---|---|---|
| | | | 2 |
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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 5 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 6 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 7 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 8 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 9 |

AN INVENTORY OF THE SKILLS AND COMPETENCIES OF EACH OF YOUR STAFF MEMBERS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 10 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 11 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 12 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 13 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 14 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 15 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 16 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 17 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 18 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 19 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 20 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 21 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 22 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 23 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

A MEASURE OF THE ORGANIZATIONAL LOYALTY OF EACH OF YOUR STAFF MEMBERS

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 24 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 25 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 26 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 27 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 28 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 29 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 30 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 31 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 32 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 33 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 34 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 35 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 36 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 37 |

AMOUNTS AND COSTS OF SUPPLIES SUCH AS PAPER, BLANK CASSETTE TAPES, INK, CLEANING COMPOUND, ETC. PURCHASED TO DATE

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 38 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 39 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 40 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 41 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 42 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 43 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 44 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 45 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 46 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 47 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 48 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 49 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 50 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 51 |

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

AN INVENTORY OF THE ATTITUDES OF EACH OF YOUR STAFF MEMBERS

| | | | | | | | | | Do not write in this space |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 52 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 53 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 54 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 55 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 56 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 57 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 58 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 59 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 60 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 61 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 62 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 63 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 64 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 65 |

A MEASURE OF THE LEADERSHIP STYLE OF EACH ADMINISTRATOR

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 66 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 67 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 68 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 69 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 70 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 71 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 72 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 73 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 74 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 75 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 76 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 77 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 78 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 79 |

Do not write
in this space

Please circle the appropriate number in each adjective pair that best expresses your feelings about this type of information.

A MEASURE OF THE PRODUCTIVITY OF EACH OF YOUR STAFF MEMBERS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 80 |
| | | | | | | | | | I.D. \| Card 3 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 5 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 6 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 7 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 8 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 9 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 10 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 11 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 12 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 13 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 14 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 15 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 16 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 17 |

A MEASURE OF THE ORGANIZATIONAL BEHAVIOR OF EACH OF YOUR SUBORDINATES AND PEERS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad | 18 |
| Meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Meaningless | 19 |
| Foolish | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Wise | 20 |
| Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable | 21 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative | 22 |
| Soft | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hard | 23 |
| Heavy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Light | 24 |
| Humorous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Serious | 25 |
| Deep | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Shallow | 26 |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unrealistic | 27 |
| Important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unimportant | 28 |
| Irrelevant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relevant | 29 |
| Efficient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unefficient | 30 |
| Regressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Progressive | 31 |

THANK YOU FOR COMPLETING
THE QUESTIONNAIRE

# APPENDIX L

## GRAPHIC SUMMARY OF ATTITUDES, STRENGTH OF ATTITUDES AND PROBABLE BEHAVIOR PATTERNS OF STUDY RESPONDENTS

## GRAPHIC SUMMARY OF ATTITUDES, STRENGTH OF ATTITUDES AND PROBABLE BEHAVIOR PATTERNS OF STUDY RESPONDENTS

The attitudes (evaluative dimension) and strength of attitudes (potency dimension) of the respondent groups by each of the eight sub-problems are summarized below in chart form (significant difference denoted by an * and semantic space plot given in brackets):

1. Sub-Problem One: HRA and Administrative Position

| Administrative Position | Attitude | Strength of Attitude |
|---|---|---|
| Principals | slightly negative (-0.26) | minimally weak (-0.15) |
| Superintendents | slightly positive (+0.27) | slightly strong (+0.32) |
| Secretary-Tres. | consid. positive (+1.63) | partially strong (+0.66) |

2. Sub-Problem Two: HRA and Leadership Style

| Leadership Style | Attitude | Strength of Attitude |
|---|---|---|
| Task-Oriented | *moderately negative (-1.17) | partially strong (+0.74) |
| Socioindepend | *partially negative (-0.61) | partially weak (-0.65) |
| Rel.-Oriented | *considerably positive (+1.80) | minimally weak (-0.11) |

3. Sub-Problem Three: HRA and Numerically Derived Complexity

| Complexity (Numeric) | Attitude | Strength of Attitude |
|---|---|---|
| Low | slightly positive (+0.27) | partially weak (-0.61) |
| Medium | partially positive (+0.61) | partially strong (+0.67) |
| High | minimally positive (+0.10) | slightly weak (-0.26) |

4. Sub-Problem Four: HRA and Perceived Complexity

| Complexity (Perceived) | Attitude | Strength of Attitude |
|---|---|---|
| Low | minimally positive (+0.18) | minimally weak (-0.12) |
| Medium | minimally negative (-0.61) | *partially weak (-0.78) |
| High | partially negative (-0.61) | *very strong (+2.71) |

5. Sub-Problem Five: HRA Causal Variables and Adm. Position

| Administrative Position | Attitude | Strength of Attitude |
|---|---|---|
| Principals | slightly positive (+0.27) | slightly strong (+0.47) |
| Superintendents | consid. positive (+1.19) | somewhat strong (+0.90) |
| Secretary-Tres. | very positive (+2.23) | very strong (+2.17) |

### 6. Sub-Problem Five: HRA Intervening Variables and Adm. Position

| Administrative Position | Attitude | Strength of Attitude |
|---|---|---|
| Principals | moderately negative (-1.16) | minimally weak (-0.17) |
| Superintendents | somewhat negative (-0.80) | minimally strong (+0.13) |
| Secretary-Tres. | paritally positive (+0.58) | minimally weak (-0.02) |

### 7. Sub-Problem Five: HRA End-Result Variables and Adm. Position

| Administrative Position | Attitude | Strength of Attitude |
|---|---|---|
| Principals | partially positive (+0.73) | somewhat weak (-0.81) |
| Superintendents | moderately positive (+1.19) | minimally weak (-0.12) |
| Secretary-Tres. | very positive (+2.81) | slightly weak (-0.22) |

### 8. Sub-Problem Six: HRA Causal Variables and Leadership Style

| Leadership Style | Attitude | Strength of Attitude |
|---|---|---|
| Task-Oriented | *slightly negative (-0.35) | consider. strong (+1.57) |
| Socioindepend | minimally positive (+0.10) | slightly weak (-0.30) |
| Rel.-Oriented | *very positive (+2.06) | slightly strong (+0.21) |

### 9. Sub-Problem Six: HRA Intervening Variables and Leadership Style

| Leadership Style | Attitude | Strength of Attitude |
|---|---|---|
| Task-Oriented | *very negative (-2.24) | slightly strong (+0.30) |
| Socioindepend | *consider. negative (-1.54) | moderately weak (-1.08) |
| Rel.-Oriented | *very positive (+2.06) | slightly strong (+0.20) |

### 10. Sub-Problem Six: HRA End-Result Variables and Leadership Style

| Leadership Style | Attitude | Strength of Attitude |
|---|---|---|
| Task-Oriented | *slightly negative (-0.23) | slightly strong (+0.39) |
| Socioindepend | *slightly positive (+0.21) | moderately weak (-1.20) |
| Rel.-Oriented | *extremely positive (+3.08) | moderately weak (-1.17) |

### 11. Sub-Problem Seven: HRA Causal Variables and Numeric Complexity

| Complexity (Numeric) | Attitude | Strength of Attitude |
|---|---|---|
| Low | moderately positive (+1.07) | slightly strong (+0.30) |
| Medium | minimally negative (-0.07) | moderately strong(+1.28) |
| High | partially positive (+0.64) | slightly strong (-0.27) |

12. Sub-Problem Seven: HRA Intervening Variables and Numeric Complexity

| Complexity (Numeric) | Attitude | Strength of Attitude |
|---|---|---|
| Low | partially negative (-0.78) | moderately weak (-1.31) |
| Medium | moderately negative (-1.47) | partially strong (+0.58) |
| High | partially negative (-0.79) | minimally weak (-0.11) |

13. Sub-Problem Seven: HRA End-Result Variables and Numeric Complexity

| Complexity (Numeric) | Attitude | Strength of Attitude |
|---|---|---|
| Low | moderately positive (+1.17) | partially weak (-0.59) |
| Medium | slightly positive (+0.28) | minimally weak (-0.07) |
| High | moderately positive (+1.08) | partially weak (-0.66) |

14. Sub-Problem Eight: HRA Causal Variables and Perceived Complexity

| Complexity (Perceived) | Attitude | Strength of Attitude |
|---|---|---|
| Low | partially positive (+0.78) | partially strong (+0.61) |
| Medium | partially positive (+0.51) | *partially weak (-0.56) |
| High | slightly positive (+0.39) | *extremely strong (+3.85) |

15. Sub-Problem Eight: HRA Intervening Variables and Perceived Complexity

| Complexity (Perceived) | Attitude | Strength of Attitude |
|---|---|---|
| Low | somewhat negative (-0.84) | slightly weak (-0.25) |
| Medium | moderately negative (-1.03) | somewhat weak (-0.95) |
| High | moderately negative (-1.28) | very strong (+2.10) |

16. Sub-Problem Eight: HRA End-Result Variables and Perceived Complexity

| Complexity (Perceived) | Attitude | Strength of Attitude |
|---|---|---|
| Low | moderately positive (+1.30) | somewhat weak (-0.96) |
| Medium | moderately positive (+1.02) | somewhat weak (-0.85) |
| High | partially negative (-0.75) | very strong (+2.23) |

The predicted probable behavior patterns of the respondent groups toward the assumed implementation of HRA and the three HRA variables by the eight sub-problems are summarized below in chart form (significant differences denoted by an * and E for evaluative dimension and an * and P for potency dimension, in brackets):

### 1. Sub-Problem One: HRA and Administrative Position

| Behavior Areas | Principals | Superintendents | Secretary-Tres. |
|---|---|---|---|
| Behavior Zone | 6 | 2 | 1 |
| Support Type | No Criticism | Minor Support | Mod. Support |
| Involvement | None | Minimal | Pers., direct |
| Leadership | None | None | Yes (pro) |
| Attitude Change | Quite Easy | Moderately Difficult | Very Difficult |

### 2. Sub-Problem Two: HRA and Leadership Style

| Behavior Areas | Task (*E) | Socioindep. (*E) | Relationship (*E) |
|---|---|---|---|
| Behavior Zone | 7 | 6 | 3 |
| Support Type | Consid. Criticism | Minor Criticism | Minor To None |
| Involvement | Considerable | None | None |
| Leadership | None | None | None |
| Attitude Change | Quite Difficult | Quite easy | Moderately Easy |

### 3. Sub-Problem Three: HRA and Numeric Complexity

| Behavior Areas | Low | Medium | High |
|---|---|---|---|
| Behavior Zone | 3 | 2 | 3 |
| Support Type | Minor to None | Minor | Minor to None |
| Involvement | None | Minimal | None |
| Leadership | None | None | None |
| Attitude Change | Quite Easy | Quite Difficult | Quite Easy |

### 4. Sub-Problem Four: HRA and Perceived Complexity

| Behavior Areas | Low | Medium (*P) | High (*P) |
|---|---|---|---|
| Behavior Zone | 3 | 6 | 8 |
| Support Type | None | Minor Criticism | Extreme Criticism |
| Involvement | None | None | Direct, Intense |
| Leadership | None | None | Yes (Opposition) |
| Attitude Change | Quite Easy | Quite Easy | Very Difficult |

### 5. Sub-Problem Five: HRA Causal Variables and Administrative Position

| Behavior Areas | Principals | Superintendents | Secretary-Tres. |
|---|---|---|---|
| Behavior Zone | 2 | 1 | 1 |
| Support Type | Minor | Moderate | Extreme |
| Involvement | Minimal | Considerable | Direct, Intense |
| Leadership | None | Yes (Proponent) | Yes (Advocate) |
| Attitude Change | Moder. Difficult | Very Difficult | Very Difficult |

### 6. Sub-Problem Five: HRA Intervening Variable and Administrative Position

| Behavior Areas | Principals | Superintendents | Secretary-Tres. |
|---|---|---|---|
| Behavior Zone | 6 | 7 | 3 |
| Support Type | Minor Criticism | Minor Criticism | None |
| Involvement | None | Minimal | None |
| Leadership | None | None | None |
| Attitude Change | Moderately Easy | Moderately Difficult | Easy |

### 7. Sub-Problem Five: HRA End-Result Variables and Administrative Position

| Behavior Areas | Principals | Superintendents | Secretary-Tres. |
|---|---|---|---|
| Behavior Zone | 3 | 3 | 4 |
| Support Type | Minor to None | Minor to None | Neutral |
| Involvement | None | None | None |
| Leadership | None | None | None |
| Attitude Change | Moderately Easy | Quite Easy | Quite Easy |

### 8. Sub-Problem Six: HRA Causal Variables and Leadership Style

| Behavior Areas | Task (*E) | Socio. | Relationship (*E) |
|---|---|---|---|
| Behavior Zone | 7 | 2 | 1 |
| Support Type | Consid. Criticism | Minor | Moderate |
| Involvement | Considerable | Minimal | Personal, |
| DirectLeadership | None | None | Yes (Proponent) |
| Attitude Change | Quite Difficult | Mod. Difficult | Very Difficult |

### 9. Sub-Problem Six: HRA Intervening Variables and Leadership Style

| Behavior Areas | Task (*E) | Socio. (*E) | Relationship (*E) |
|---|---|---|---|
| Behavior Zone | 8 | 5 | 2 |
| Support Type | Moderate Criticism | Neutral | Minor |
| Involvement | Direct, Personal | None | Minimal |
| Leadership | Opposition | None | None |
| Attitude Change | Very Difficult | Quite Easy | Moderately Difficult |

### 10. Sub-Problem Six: HRA End-Result Variables and Leadership Style

| Behavior Areas | Task (*E) | Socio. (*E) | Relationship (*E) |
|---|---|---|---|
| Behavior Zone | 7 | 3 | 4 |
| Support Type | Minor Criticism | Minor to None | Neutral |
| Involvement | Minimal | None | None |
| Leadership | None | None | None |
| Attitude Change | Moder. Difficult | Quite Easy | Quite Easy |

11. Sub-Problem Seven: HRA Causal Variables and Numeric Complexity

| Behavior Areas | Low | Medium | High |
|---|---|---|---|
| Behavior Zone | 2 | 7 | 2 |
| Support Type | Minor | Consid. Crit. | Minor |
| Involvement | Minimal | Considerable | Minimal |
| Leadership | None | None | None |
| Attitude Change | Mod. Difficult | Quite Difficult | Moderately Difficult |

12. Sub-Problem Seven: HRA Intervening Variables and Numeric Complexity

| Behavior Areas | Low | Medium | High |
|---|---|---|---|
| Behavior Zone | 5 | 8 | 6 |
| Support Type | Neutral | Consid. Crit. | Minor Criticism |
| Involvement | None | Direct Personal | Minimal |
| Leadership | None | Yes (Proponent) | None |
| Attitude Change | Moderately Easy | Very Difficult | Moderately Easy |

13. Sub-Problem Seven: HRA End-Result Variables and Numeric Complexity

| Behavior Areas | Low | Medium | High |
|---|---|---|---|
| Behavior Zone | 3 | 3 | 3 |
| Support Type | Minor | None | Minor |
| Involvement | None | None | None |
| Leadership | None | None | None |
| Attitude Change | Moderately Easy | Quite Easy | Moderately Easy |

14. Sub-Problem Eight: HRA Causal Variables and Perceived Complexity

| Behavior Areas | Low | Medium (*P) | High (*P) |
|---|---|---|---|
| Behavior Zone | 2 | 3 | 1 |
| Support Type | Minimal | Minor to None | Extreme |
| Involvement | Minimal | None | Direct, Intense |
| Leadership | None | None | Advocate |
| Attitude Change | Quite Difficult | Moderately Easy | Very Difficult |

15. Sub-Problem Eight: HRA Intervening Variables and Perceived Complexity

| Behavior Areas | Low | Medium | High |
|---|---|---|---|
| Behavior Zone | 6 | 6 | 8 |
| Support Type | Minor Criticism | Minor Criticism | Extreme Criticism |

| | | | |
|---|---|---|---|
| Involvement | Minimal | Minimal | Direct, Intense |
| Leadership | None | None | Opponent |
| Attitude Change | Moderately Easy | Moderately Easy | Very Difficult |

16. Sub-Problem Eight: HRA End-Result Variables and Perceived Complexity

| Behavior Areas | Low | Medium | High |
|---|---|---|---|
| Behavior Zone | 4 | 3 | 8 |
| Support Type | Neutral | Minor | Extreme Criticism |
| Involvement | None | None | Direct, Intense |
| Leadership | None | None | Opponent |
| Attitude Change | Quite Easy | Moderately Easy | Very Difficult |

# APPENDIX M

# HRA ATTITUDE AND STRENGTH OF ATTITUDE QUESTIONNAIRE COMPUTER PROGRAMMING SPECIFICATIONS

## HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| ID | 1-3 | 1 | 3 | 001-999 | (a) Original<br>001-046=superintendent<br>101-129=sec. treas.<br>200-493=principals<br>(b) Follow-up<br>081-089=superintendent<br>151-164=sec. treas.<br>601-631=principals |
| CARD # | 4 | 2 | 1 | only #1 | Can only be #1 |
| POSITION | 5 | 3 | 1 | 1-3 | Independent Variable<br>1=principal<br>2=superintendent<br>3=secretary-treasurer |
| DISTRICT TYPE | 6 | 4 | 1 | 1-5 | 1=county<br>2=division<br>3=public district<br>4=separate district<br>5=regional |
| DISTRICT # | 7-10 | 5 | 4 | 0001-9999 | officially assigned number corresponding to Field 4 |
| SCHOOL # | 11-14 | 6 | 4 | 0000-9999 | (a) schools use (prin. onl departmentally assigne numbers<br>(b) Supt. & Sec. Treas. us 0000 to denote "not principals" |
| SEX | 15 | 7 | 1 | 1-2 | 1=male<br>2=female |

HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| AGE | 16 | 8 | 1 | 1-6 | 1=20 or less<br>2=21-25<br>3=26-30<br>4=31-25<br>5=46-65<br>6=66 or more |
| TRAINING | 17 | 9 | 1 | 1-4 | 1=Bachelors<br>2=Masters<br>3=Doctorate<br>4=Non-University |
| EXPERIENCE | 18 | 10 | 1 | 1-8 | 1=6 or less<br>2=7-10<br>3=11-15<br>4=16-20<br>5=21-25<br>6=26-30<br>7=31-35<br>8=36 or more |

### MRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| ORG. COMPLEXITY (A) | 19-23 | 11 | 5 | 1-9;A-Z | (a) Independent Variable<br>(b) Absolute measures for each of 3 factors |
| 1. School Hierarchy | 19 | 12 | 1 | 1-9 | (a) Vertical Differentiatio<br>(b) School with largest # of units |
| 2. C.O. Hierarchy | 20 | 13 | 1 | 1-9 | (a) Vertical Differentiatio |
| 3. Ind. Adm. Schools | 21 | 14 | 1 | 1-9;A-Z | (a) Program must convert alpha to numeric code, i.e., A=10, B=11, C=12, D=13, etc.<br>(b) Spatial Dispersion |
| 4. # of C.O. Depts. | 22 | 15 | 1 | 0-9;A-Z | (a) Horizontal Different.<br>(b) Same as Field 14 for alpha numeric conversions. |
| 5. # of School Depts. | 23 | 16 | 1 | 0 -9;A-Z | (a) Horizontal Different.<br>(b) Same as Field 14 for alpha numeric conversion.<br>(c) only school with larges numbers of separate departments<br>(d) Fields 15 and 16 reversed for Principals only. i.e., all those with a 1 in Field 3. |
| ORG. COMPLEXITY (B) | 24-26 | 17 | 3 | 1-3 | (a) Independent Variable.<br>(b) forced pair choices among pairs of 3 factors--Thurstone's weighting system for Org. Complexity (A) above |
| 1. V.D. versus S.D. | 24 | 18 | 1 | 1 or 2 | 1=VD;2=SD |
| 2. S.D. versus H.D. | 25 | 19 | 1 | 2 Or 3 | 2=SD;3=HD |
| 3. V.D. versus H.D. | 26 | 20 | 1 | 1 or 3 | 1=VD;3=HD |

## HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| ORG. COMPLEXITY (C) | 27 | 21 | 1 | 1-5 | (a) subjective judgement as an alternative to A & B<br>(b) 1=scarcely; 2=somewhat; 3=quite; 4= very; 5=extremely<br>(c) Independent Variable |
| Least Preferred Co-Worker | 28-43 | 22 | 16 | 1-8 | (a) Independent Variable<br>(b) Combination of Fields 23-38 |
| *1 Pleasant-Unpleasant | 28 | *23 | 1 | 1-8 | 8=pleasant; 1=unpleasant 7-2=graded scale from pleasant (7) to unpleasant (2); also reflexive (r) |
| *2 Friendly-Unfriendly | 29 | *24 | 1 | 1-8 | same as Field 23 (r) |
| 3 Rejecting-Accepting | 30 | 25 | 1 | 1-8 | 1= Rejecting; 8= Accepting |
| *4 Helpful-Frustr. | 31 | *26 | 1 | 1-8 | same as Field 23 (r) |
| 5 Unethusiastic-Eth. | 32 | 27 | 1 | 1-8 | same as Field 25 |
| 6 Tense-Relaxed | 33 | 28 | 1 | 1-8 | same as Field 25 |
| 7 Distant-Close | 34 | 29 | 1 | 1-8 | same as Field 25 |
| 8 Cold-Warm | 35 | 30 | 1 | 1-8 | same as Field 25 |
| *9 Cooperative-Uncooperative | 36 | *31 | 1 | 1-8 | same as field 23 (r) |
| *10 Supportive-Hostile | 37 | *32 | 1 | 1-8 | same as Field 23 (r) |
| 11 Boring-Interesting | 38 | 33 | 1 | 1-8 | same as Field 25 |
| 12 Quarel-Harmon. | 39 | 34 | 1 | 1-8 | same as Field 25 |
| *13 Self-Assured-Hesitant | 40 | *35 | 1 | 1-8 | same as Field 23 (r) |
| *14 Effective-Ineffective | 41 | *36 | 1 | 1-8 | same as Field 23 (r) |
| 15 Gloomy-Cheerful | 42 | 37 | 1 | 1-8 | same as Field 25 |
| *16 Open-Guarded | 43 | *38 | 1 | 1-8 | same as Field 23 (r) |

* Reflexive

## HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#:1 Satisfaction Level... | | | | | End-Result Dependent Variable Factor |
| Evaluation | 44-48;53-57 | 39 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 44 | *40 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 45 | *41 | 1 | *1-7 | same as Field 40 (r) |
| 3 Foolish-Wise | 46 | 42 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 47 | 43 | 1 | 1-7 | same as Field 42 |
| *5 Positive-Negative | 48 | *44 | 1 | *1-7 | same as Field 40 (r) |
| *6 Realistic-Unrealistic | 53 | *45 | 1 | *1-7 | same as Field 40 (r) |
| *7 Important-Unimportant | 54 | *46 | 1 | *1-7 | same as Field 40 (r) |
| 8 Irrelevant-Relevant | 55 | 47 | 1 | 1-7 | same as Field 42 |
| *9 Effective-Ineffective | 56 | *48 | 1 | *1-7 | same as field 40 (r) |
| 10 Regressive-Progressive | 57 | 49 | 1 | 1-7 | same as Field 42 |
| Potency | 49-52 | 50 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 49 | 51 | 1 | 1-7 | 7=hard; 1=soft |
| *2 heavy-light | 50 | *52 | 1 | *1-7 | 7=heavy; 1=light (r) |
| 3 humorous-serious | 51 | 53 | 1 | 1-7 | same as Field 51 |
| *4 deep-shallow | 52 | *54 | 1 | *1-7 | same as Field 52 (r) |

* Reflexive

| | | | | | |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#:2 Motivation Level | | | | | Intervening Dependent Variable Factor |
| Evaluation | 58-62;67-71 | 55 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 58 | *56 | 1 | *1-7 | 7=Good; 1=Bad |
| *2 Meaningful-Meaningless | 59 | *57 | 1 | *1-7 | same as Field 56 (r) |
| 3 Foolish-Wise | 60 | 58 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 61 | 59 | 1 | 1-7 | same as Field 58 |
| *5 Positive-Negative | 62 | *60 | 1 | *1-7 | same as Field 56 (r) |
| *6 Realistic-Unrealistic | 67 | *61 | 1 | *1-7 | same as Field 56 (r) |
| *7 Important-Unimportant | 68 | *62 | 1 | *1-7 | same as Field 56 (r) |
| 8 Irrelevant-Relevant | 69 | 63 | 1 | 1-7 | same as Field 58 |
| *9 Effective-Ineffective | 70 | *64 | 1 | *1-7 | same as Field 56 (r) |
| 10 Regressive-Progressive | 71 | 65 | 1 | 1-7 | same as Field 58 |
| Potentcy | 63-66 | 66 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 63 | 67 | 1 | 1-7 | 7=Hard, 1=Soft |
| *2 heavy-light | 64 | *68 | 1 | *1-7 | 7=Heavy; 1=Light (r) |
| 3 humorous-serious | 65 | 69 | 1 | 1-7 | same as Field 67 |
| *4 deep-shallow | 66 | *70 | 1 | *1-7 | same as Field 68 (r) |

* Reflexive

HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#:3 Managerial Org'al Behavior... | | | | | Causal Dependent Variable Factor |
| Evaluation | (card 1)(card 2)<br>72-76;5-9 | 71 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 72 | 72 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 73 | *73 | 1 | *1-7 | same as Field 72 (r) |
| 3 Foolish-Wise | 74 | 74 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 75 | 75 | 1 | 1-7 | same as Field 74 |
| *5 Positive-Negative | 76 | *76 | 1 | *1-7 | same as Field 72 (r) |
| ID | 1-3 | 77 | 3 | 001-999 | same as Field 1 |
| CARD # | 4 | 78 | 1 | 2 | Can only be #2 |
| *6 Realistic-Unrealistic | 5 | *79 | 1 | *1-7 | same as Field 72 (r) |
| *7 Important-Unimportant | 6 | *80 | 1 | *1-7 | same as Field 72(r) |
| 8 Irrelevant-Relevant | 7 | 81 | 1 | 1-7 | same as Field 74 |
| *9 Effective-Ineffective | 8 | *82 | 1 | *1-7 | same as Field 72 (r) |
| 10 Regressive-Progressive | 9 | 83 | 1 | 1-7 | same as Field 74 |
| Potency | (Card 1)<br>77-80 | 84 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 77 | 85 | 1 | 1-7 | 7=hard; 1=soft |
| *2 heavy-light | 78 | *86 | 1 | *1-7 | 7=heavy; 1=light (r) |
| 3 humorous-serious | 79 | 87 | 1 | 1-7 | same as Field 85 |
| *4 deep-shallow | 80 | *88 | 1 | *1-7 | same as Field 86 (r) |

*Reflexive

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#:4 Inv. of Skills and Competencies... | | | | | Causal Dependent Variable Factor |
| Evaluation | (Card 2)<br>10-14;19-23 | 89 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 10 | *90 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 11 | *91 | 1 | *1-7 | same as Field 90 (r) |
| 3 Foolish-Wise | 12 | 92 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 13 | 93 | 1 | 1-7 | same as Field 92 |
| *5 Positive-Negative | 14 | *94 | 1 | *1-7 | same as Field 90 (r) |
| *6 Realistic-Unrealistic | 19 | *95 | 1 | *1-7 | same as Field 90 (r) |
| *7 Important-Unimportant | 20 | *96 | 1 | *1-7 | same as Field 90 (r) |

2

HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| 8 Irrelevant-Relevant | 21 | 97 | 1 | 1-7 | same as Field 92 |
| *9 Effective-Ineffective | 22 | *98 | 1 | *1-7 | same as Field 90 (r) |
| 10 Regressive Progressive | 23 | 99 | 1 | 1-7 | same as Field 92 |
| Potency | 15-18 | 100 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 15 | 101 | 1 | 1-7 | 7=hard; 1=soft |
| *2 heavy-light | 16 | *102 | 1 | *1-7 | 7=heavy; 1=light (r) |
| 3 humorous-serious | 17 | 103 | 1 | 1-7 | same as Field 101 |
| *4 deep-shallow | 18 | *104 | 1 | *1-7 | same as Field 102 (r) |

*Reflexive

| | | | | | |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#:5 Org'al Loyalty ... | | | | | Intervening Dependent Variable Factor |
| Evaluation | 24-28;33-37 | 105 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 24 | *106 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 25 | *107 | 1 | *1-7 | same as Field 106 (r) |
| 3 Foolish-Wise | 26 | 108 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 27 | 109 | 1 | 1-7 | same as Field 108 |
| *5 Positive-Negative | 28 | *110 | 1 | *1-7 | same as Field 106 (r) |
| *6 Realistic-Unrealistic | 33 | *111 | 1 | *1-7 | same as Field 106 (r) |
| *7 Important-Unimportant | 34 | *112 | 1 | *1-7 | same as Field 106 (r) |
| 8 Irrelevant-Relevant | 35 | 113 | 1 | 1-7 | same as Field 108 |
| *9 Effective-Ineffective | 36 | *114 | 1 | *1-7 | same as Field 106 (r) |
| 10 Regressive-Progressive | 37 | 115 | 1 | 1-7 | same as Field 108 |
| Potency | 29-32 | 116 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 29 | 117 | 1 | 1-7 | 7=hard; 1=soft |
| *2 heavy-light | 30 | *118 | 1 | *1-7 | 7=heavy; 1=light (r) |
| 3 humorous-serious | 31 | 119 | 1 | 1-7 | same as Field 117 |
| *4 deep-shallow | 32 | *120 | 1 | *1-7 | same as Field 118 (r) |

* Reflexive

## HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#:4 Amount and Cost of Supplies... | | | | | Control Concept |
| Evaluation | 38-42;47-51 | 121 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 38 | *122 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 39 | *123 | 1 | *1-7 | same as Field 122 (r) |
| 3 Foolish-Wise | 40 | 124 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 41 | 125 | 1 | 1-7 | same as Field 124 |
| *5 Positive-Negative | 42 | *126 | 1 | *1-7 | same as Field 122 (r) |
| *6 Realistic-Unrealistic | 47 | *127 | 1 | *1-7 | same as Field 122 (r) |
| *7 Important-Unimportant | 48 | *128 | 1 | *1-7 | same as Field 122 (r) |
| 8 Irrelevant-Relevant | 49 | 129 | 1 | 1-7 | same as Field 124 |
| *9 Effective-Ineffective | 50 | *130 | 1 | *1-7 | same as Field 122 (r) |
| 10 Regressive-Progressive | 51 | 131 | 1 | 1-7 | same as Field 124 |
| Potency | 43-46 | 132 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 43 | 133 | 1 | 1-7 | 7=Hard; 1=Soft |
| *2 heavy-light | 44 | *134 | 1 | *1-7 | 7=Heavy; 1=Light (r) |
| 3 humorous-serious | 45 | 135 | 1 | 1-7 | same as Field 133 |
| *4 deep-shallow | 46 | *136 | 1 | *1-7 | same as Field 134 (r) |

* Reflexive

| | | | | | |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#:6 Inventory of Attitudes... | | | | | Intervening Dependent Variable Factor |
| Evaluation | 52-56;61-65 | 137 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 52 | *138 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 53 | *139 | 1 | *1-7 | same as Field 138 (r) |
| 3 Foolish-Wise | 54 | 140 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 55 | 141 | 1 | 1-7 | same as Field 140 |
| *5 Positive-Negative | 56 | *142 | 1 | *1-7 | same as Field 138 (r) |
| *6 Realistic-Unrealistic | 61 | *143 | 1 | *1-7 | same as Field 138 (r) |
| *7 Important-Unimportant | 62 | *144 | 1 | *1-7 | same as Field 138 (r) |
| 8 Irrelevant-Relevant | 63 | 145 | 1 | 1-7 | same as Field 140 |
| *9 Effective-Ineffective | 64 | *146 | 1 | *1-7 | same as Field 138 (r) |
| 10 Regressive-Progressive | 65 | 147 | 1 | 1-7 | same as Field 140 |
| Potency | 57-60 | 148 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 57 | 149 | 1 | 1-7 | 7=Hard; 1=Soft |
| *2 heavy-light | 58 | *150 | 1 | *1-7 | 7=Heavy; 1=Light (r) |
| 3 humorous-serious | 59 | 151 | 1 | 1-7 | same as Field 149 |
| *4 deep-shallow | 60 | *152 | 1 | *1-7 | same as Field 150 (r) |

* Reflexive

## HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#: 7 Leadership Style... | | | | | Causal Dependent Variable Factor |
| Evaluation | 66-70;75-79 | 153 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 66 | *154 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 67 | *155 | 1 | *1-7 | same as Field 154 (r) |
| 3 Foolish-Wise | 68 | 156 | 1 | 1-7 | 1-Foolish; 7=Wise |
| 4 Worthless-Valuable | 69 | 157 | 1 | 1-7 | same as Field 156 |
| *5 Positive-Negative | 70 | *158 | 1 | *1-7 | same as Field 154 (r) |
| *6 Realistic-Unrealistic | 75 | *159 | 1 | *1-7 | same as Field 154 (r) |
| *7 Important-Unimportant | 76 | *160 | 1 | *1-7 | same as Field 154 (r) |
| 8 Irrelevant-Relevant | 77 | 161 | 1 | 1-7 | same as Field 156 |
| *9 Effective-Ineffective | 78 | *162 | 1 | *1-7 | same as Field 154 (r) |
| 10 Regressive-Progressive | 79 | 163 | 1 | 1-7 | same as Field 156 |
| Potency | 71-74 | 164 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 71 | 165 | 1 | 1-7 | 7=Hard; 1=Soft |
| *2 heavy-light | 72 | *166 | 1 | *1-7 | 7=Heavy; 1=Light (r) |
| 3 humorous-serious | 73 | 167 | 1 | 1-7 | same as Field 165 |
| *4 deep-shallow | 74 | *168 | 1 | *1-7 | same as Field 166 (r) |

* Reflexive

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| TRIGGER CONCEPT<br>#: 8 Productivity... | 80 (card 2)<br>5-8 (card 3) 13-17 (card 3) | 169 | 10 | 1-7 | End-Result Dependent Variable Factor (combination of below) |
| Evaluation | | | | | |
| *1 Good-Bad | 80 | *170 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| ID | 1-3 | 171 | 3 | 001-999 | same as Field 1 |
| CARD # | 4 | 172 | 1 | 3 | Can only be #3 |
| *2 Meaningful-Meaningless | 5 | *173 | 1 | *1-7 | same as Field 170 (r) |
| 3 Foolish-Wise | 6 | 174 | 1 | 1-7 | 1 =Foolish; 7 =Wise |
| 4 Worthless-Valuable | 7 | 175 | 1 | 1-7 | same as Field 174 |
| *5 Positive-Negative | 8 | *176 | 1 | *1-7 | same as Field 170 (r) |
| *6 Realistic-Unrealistic | 13 | *177 | 1 | *1-7 | same as Field 170 (r) |
| *7 Important-Unimportant | 14 | *178 | 1 | *1-7 | same as Field 170 (r) |
| 8 Irrelevant-Relevant | 15 | *179 | 1 | 1-7 | same as Field 174 |
| *9 Effective-Ineffective | 16 | *180 | 1 | *1-7 | same as Field 170 (r) |
| 10 Regressive-Progressive | 17 | 181 | 1 | 1-7 | same as Field 174 |

HRA ATTITUDE MEASUREMENT PROGRAM SPECIFICATIONS (J.L.M.)

| ITEM DESCRIPTOR | CARD COLUMN NUMBER(S) | FIELD | FORMAT (# OF INDIVID. INTEGERS) | RANGE | COMMENTS |
|---|---|---|---|---|---|
| | (Card 3) | | | | |
| Potency | 9-12 | 182 | 4 | 1-7 | (combination of below) |
| 1 soft-hard | 9 | 183 | 1 | 1-7 | 7=Hard; 1=Soft |
| *2 heavy-light | 10 | *184 | 1 | *1-7 | 7=Heavy; 1=Light (r) |
| 3 humorous-serious | 11 | 185 | 1 | 1-7 | same as Field 183 |
| *4 deep-shallow | 12 | *186 | 1 | *1-7 | same as Field 184 (r) |

* Reflexive

TRIGGER CONCEPT
#:9 Org. Beh. of Peers and Subordinates...

Intervening Dependent Variable Factor.

| | | | | | |
|---|---|---|---|---|---|
| | (Card 3) | | | | |
| Evaluation | 18-22;27-31 | 187 | 10 | 1-7 | (combination of below) |
| *1 Good-Bad | 18 | *188 | 1 | *1-7 | 7=Good; 1=Bad (r) |
| *2 Meaningful-Meaningless | 19 | *189 | 1 | *1-7 | same as Field 188 (r) |
| 3 Foolish-Wise | 20 | 190 | 1 | 1-7 | 1=Foolish; 7=Wise |
| 4 Worthless-Valuable | 21 | 191 | 1 | 1-7 | same as Field 190 |
| *5 Positive-Negative | 22 | *192 | 1 | *1-7 | same as Field 188 (r) |
| *6 Realistic-Unrealistic | 27 | *193 | 1 | *1-7 | same as Field 188 (r) |
| *7 Important-Unimportant | 28 | *194 | 1 | *1-7 | same as Field 188 (r) |
| 8 Irrelevant-Relevant | 29 | 195 | 1 | 1-7 | same as Field 190 |
| *9 Effective-Ineffective | 30 | *196 | 1 | *1-7 | same as Field 188 (r) |
| 10 Regressive-Progressive | 31 | 197 | 1 | 1-7 | same as Field 190 |
| | | | | | |
| Potency | 23-26 | 198 | 4 | 1-7 | (combination of below) |
| 1 Soft-Hard | 23 | 199 | 1 | 1-7 | 7=Hard; 1=Soft |
| *2 Heavy-Light | 24 | *200 | 1 | *1-7 | 7=Heavy; 1=Light (r) |
| 3 Humorous-Serious | 25 | 201 | 1 | 1-7 | same as Field 199 |
| *4 Deep-Shallow | 26 | *202 | 1 | *1-7 | same as Field 200 (r) |

# VITA

# VITA

**NAME:** John Lyon Myroon

**PLACE OF BIRTH:** Radway, Alberta

**YEAR OF BIRTH:** 1941

## POST-SECONDARY EDUCATION AND DEGREES

University of Alberta
Edmonton, Alberta
1962-1967 B.Ed.

University of Alberta
Edmonton, Alberta
1968-1969 M.Ed.

## HONOURS AND AWARDS

B.Ed. With Distinction
University of Alberta
1967

First Class Standing Award
University of Alberta
1967

## RELATED WORK EXPERIENCE

Principal
Radway School
1967-1968

Assistant Superintendent of Schools
Wainwright School Division #32
1969-1970

PPBES Consultant
Alberta Department of Education
1970-1974

Acting Superintendent of Schools
County of Wheatland #16
1974

Acting Superintendent of Schools
Northland School Division #32
1974-1975

Planning Consultant
Alberta Department of Education
1976-1977

Executive Director
Alberta Department of Labour
1978-1980

Assistant Deputy Minister
Alberta Department of Labour
1981 to present

## PROFESSIONAL MEMBERSHIPS

Institute of Public Administration of Canada

PDK (Phi Delta Kappa)

CSSE (Canadian Society for Studies in Education)

CASEA (Canadian Association for the Study of Educational Administration)

Lamda Chi Alpha

## PUBLICATIONS

"Zero-Base Budgeting: Building in a Balance".
The Alberta School Trustee - Summer, 1978 Pages 18-20

*"Toward the Improvement of the Budgeting Process and Policy Realization Through Zero-Base Budgeting:. A paper presented to The First Congress on Education, Toronto, June 20, 1978.

*"Provincial Education Policymaking: Shaping Tomorrow's Future or Reliving Yesterday Tomorrow?" A paper presented to the First Congress on Education, Toronto, June 21, 1978.

*"Toward the Improvement of Public Policymaking: A Policy Sciences Developmental Costruct". A paper (joint authorship with E.J. Kozakewich and J.L. Tymko) presented by J.L. Myroon to the CSSE Annual Conference, Fredericton, N.B., June 7, 1977.

"The Saga of Declining Enrolments in Alberta and Canada: Where Have All the Students Gone?" A paper presented with D. Norton to the CASS/AEMS Annual Conference, Edmonton, April 4, 1977.

*"Toward a Human Resources Accounting (HRA) - Based Model for Designing an Organizational Effectiveness Audit in Education". A paper presented to the 1976 CSSE Annual Conference, Quebec City, June 3, 1976.

PAB Manual, Interim Edition, 1973, Department of Education

An ERMS (Educational Resources Management System) PPBES Show and Tell Handbook, ASBO, 1973 (one chapter)

An operational FIS Operations Manual for Municipalities, Department of Municipal Affairs, 1973

Publishing Editor of "PPBES Systems in Education"

Unpublished Master's Thesis - Educational Unit Cost Analysis", 1969.

* Entered by ERIC in the Resources in Education (RIE) index.